यह एम एस आॅफिस का एक software है। जिसकी सहायता से हम डाटाबेस पर डाटा प्रोसेसिंग का कार्य कर सकते है। एवं डाटा को स्टोर कर सकते है। इसमें डाटाबेस को मैनेज करने के लिये विभिन्न प्रकार के टूल होते है। जिसका प्रयोग करके डाटाबेस की फाॅर्मेटिंग कर सकते हे। इस एप्लीकेशन साॅफ्टवेयर के मेन्यु बार में नौ मेन्यु होते है। इसमें विभिन्न प्रकार की टूलबार होती है। जिसका प्रयोग करके अपने कार्य को आसानी से कर सकते है। इसमें एक एप्लीकेशन विंडो होती है। जिसके अन्दर वर्कबुक होती हैं। वर्कबुक के अन्दर वर्कसीट होती है। एक्सेल में डाटा को वर्कशीट में स्टोर किया जाता है। इसमें रो ओर काॅलम होते है। रेा और काॅलम से मिलकर सेल बनती हैं इसमें प्रत्येक सेल का एक address होता है। जिसे सेल एड्रेस कहा जाता है। यह एड्रेस काॅलम और रो के नाम से मिलकर बना होता है। जैसे A1, BB10 आदि। एक वर्कसीट में 65536 रो और 256 काॅलम होते है। रेा का नाम Number से रहता है। और काॅलम का नाम alphabet में रहता है। इसमें कुल सेल की संख्या निम्न होती है। 65536*256=16777216 एक वर्कवुक में 256 वर्कसीट होती है। इसमें जो फाईल बनती है। उसका द्वितीयक नाम .XLS होता है।

वर्कबुकः- यह एक ऐक्सल फाईल होती है। जिसके अन्दर कई वर्कसीट होती है। जिसमें डाटा को स्टोर किया जाता है। एक वर्कबुक के अन्दर 256 वर्कसीट होती है। वाय डिफाल्ट तीन वर्कसीट होती है। इसमें नई वर्कसीट को जोडा या डिलिट किया जा सकता है। रीनेम किया जा सकता है और इसमें सीट को काॅपी मूव आदि का कार्य सरलता से किया जा सकता है। वर्कबुक open करने पर वर्कसीट अपने आप खुल होती है। एक समय में एक ही वर्कबुक पर कार्य किया जाता सकता है। जिसे ऐक्टिव बर्क सीट कहा जाता है।

वर्कसीटः- वर्कसीट बुक के पेज की तरह होती है। जिसमें हम डाटा को स्टोर कर सकते है। एक वर्कसीट में 65536 रो और 256 काॅलम होते है। एवं 65536*256=16777216 सेल होती है। प्रत्येक काॅलम का एक नाम 55 होता है। जो एल्फाबेट होते है। यह रेंज A से IV =256 तक होती है। एवं रो का नाम न्यूमेंरिक होता है। इसकी रेंज 1 To 65536 तक होती है। इसको रीनेम किया जा सकता है।

सेलः- रो और काॅलम के मिलने से सेल बनती है। एक वर्कसीट में 65536*256=16777216 cells बमससे होती है। सेल में डाटा को लिखा जाता है। एक सेल में 255 अक्षर लिखे जा सकते है। काॅलम एवं रो के नाम को मिलाकर सेल का नाम बनता है। यह सेल का ऐडस होता है। दो सेल ऐडस मिलकर रेंज ऐडस बनाते है। इसमें दो या दो से अधिक सेल को आपस में मर्ज किया जा सकता है और सेल की फाॅमेटिंग का कार्य भी किया जा सकता है।

एक्सेल में फ़ॉर्मूला या फंक्शन का बहुत महत्त्व हैं जब हम कोई गणना करना चाहते हैं जैसे – किसी कॉलम के कुछ सेलों को जोड़ना, एक संख्या का दुसरे में गुणा करना, किसी रेंज के डाटा का औसत निकालना आदि, तो हम उस गणना के लिए फोर्मुलों का उपयोग करते हैं कोई फ़ॉर्मूला उस सेल में भरा जाता हैं जहाँ हम गणना का परिणाम दिखाना चाहते हैं ऍम एस एक्सेल में फ़ॉर्मूला हमेशा बराबर चिन्ह (=) से प्रारंभ होता हैं|

एक्सेल में पहले से परिभाषित फार्मूले होते है जिन्हें फंक्शन कहते हैं जिनके द्वारा विभिन्न प्रकार के कार्य किये जा सकते है जैसे जोड़ना, घटना, गुणा, भाग, डेट, टाइम आदि| यह प्रकार के होते है। जो निम्न है।

1. Math or String

2. Date & Time
3. Text
4. Financial
5. Logical
6. Statically
7. Lookup or reference

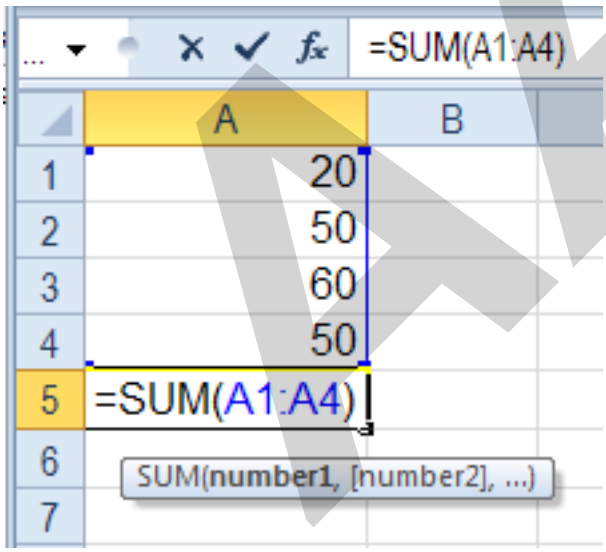
Function का प्रयोग करना:- इसका प्रयोग दो प्रकार से किया जाता है।
Director Type करके:- इसमें Function को = के चिन्ह के बाद टाईप कर देते है और उसमें Argument insert करा देते है। और अंत में इंटर या क्लिक करके उसका परिणाम प्राप्त कर सकते है।

Menu के द्वारा:- Insert menu → Function पर क्लिक करने पर Function डायलाॅग बॉक्स आता है। जिसमें Function सिलेक्ट करते है। और ok button पर क्लिक करते हैं। और उसके बाद उसमें उसके आॅर्गूमेंट देते है और ok button पर क्लिक करते है।

Math or String Function

1. SUM() :- इस Function के द्वारा संख्याओं को जोड़ा जाता है। इसमें value, cell address or cell range दी जा सकती है।

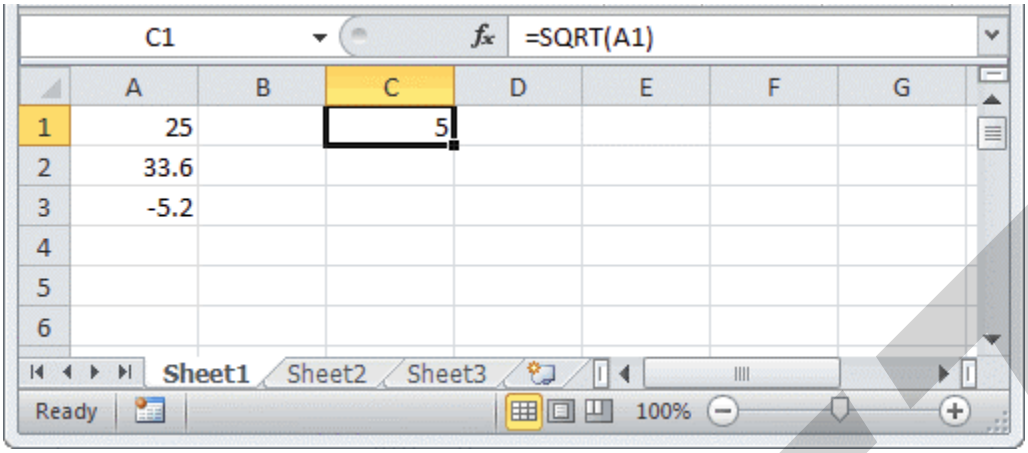
Example:- =SUM(a1:a4)



result:- 180

2. SQRT() :- इस Function की सहायता से किसी भी संख्या का SQUARE ROOT निकाला जाता है। इसके आर्गूमेंट में किसी संख्या का सेल एड्रेस देते है या वह संख्या देते है। जिसका SQUARE ROOT निकालना होता है।

Example:- =SQRT(25)



Result :- 5

3. odd() :- इस Function से सम संख्या को विषम संख्या में बदला जा सकता है। उदाहरण=odd(80)

Result=81

4. even() :- इस Function से विषम संख्या को सम संख्या में बदला जा सकता है। Example:- =even(79)

Result=80

5. MOD() :- इस function की सहायता से किसी भी संख्या का शेषफल निकाला जाता है। इसमें दो आर्गूमेंट दिये जाते है।
Example:- =MOD(26,5)

result=1

6.POWER() :- इस Function से किसी भी संख्या की घात की गणना की जा सकती हैं। इसमें दो आर्गूमेंट दिये जाते है पहली संख्या, दूसरी पावर।
Example:- =POWER(5,2)

Result = 25

7. ABS() :- इससे absolute value निकालते है। अर्थात यदि कोई चिन्ह लगा है। तो उसको हटा दिया जाता है। यह आर्गूमेंट में एक नंबर लेता है।

Example:- =abs (-125)

Result = 125

8.Fact() :- इस Function की सहायता से किसी भी संख्या का Factorial number निकाल सकते है। यह आर्गूमेंट में एक नंबर लेता है।
जैसे 5 का Factorial होता है। 1*2*3*4*5=120

Example:- =fact (5)

Result= 120

9. INT() :- इस function से किसी भी संख्या की इंटीजर Value निकाल सकते है। यह आर्गूमेंट में एक नंबर लेता है।

Example:- =fact(123.34)

Result=123

Text Function

इस Function का प्रयोग टैक्ट के लिये किया जाता है। इसलिये इन्हे टैक्ट Function कहा जाता है। यह निम्न है।
1. UPPER():- यह Function lower case के अक्षर को बडे अक्षर में बदलता है।

Syntax:- =UPPER(TEXT)

Example:- UPPER(“CyberDairy Solutions”)

Result:- CYBERDAIRY SOLUTIONS

2. LOWER() :- यह Function Upper Case के अक्षर को Lower Case अक्षर में बदलता है।

Syntax:- =LOWER(TEXT)

Example:- LOWER(“CYBERDAIRY SOLUTIONS”)

Result:- cyberdairy solutions

3. Proper():- यह Function text को proper case में सेट करता है।

Syntax: =proper(TEXT)

Example:- proper(“CYBERDAIRY SOLUTIONS”)

Result:- Cyberdairy Solutions

4. len():- यह Function text के अक्षर गिनता है।

Syntax: =len(TEXT)

Example:- len("Computer")

Result:- 8

5.left():- यह Function शब्द के अक्षरो को बायीं तरफ से निकालता है। इसमें टैक्ट एवं कितने अक्षर निकालना है। उसकी संख्या देनी होती है।

Syntax: =Left(TEXT, Number)

Example:- Left("Computer",3)

Result:- Com

6. Right():- यह Function शब्द के अक्षरो को दायीं तरफ से निकालता है। इसमें टैक्ट एवं कितने अक्षर निकालना है। उसकी संख्या देनी होती है।

Syntax: =Right(TEXT, Number)

Example:- Left("Computer",2)

Result:- er

7. TRIM():- यह Function टैक्ट के आगे पीछे के खाली स्थान को खत्म कर देता है।

Syntax: =Trim(TEXT)

Example:- Left(" Computer ")

Result:- Computer

8.MID():- यह Function शब्दों को अक्षरो के बीच से निकालाता है। इसमें आर्गूमेंट के तौर पर टैक्ट एवं कहाॅ से अक्षर निकालना है। और कितने अक्षर निकालना हैं । उसकी संख्या देते है।

Syntax: =MID(TEXT,START NUMBER , END NUMBER)

Example:- Left("MICRO COMPUTER",6,7)

Result:- COMPUTER

DATE OR TIME FUNCTION

DATE:-

1. NOW():- यह Function Computer की current date and Time देता है।

=NOW()

OUT PUT- 10/20/2012 19:16

2. DAY():- यह Function DATE से दिन निकालता है।

Syntax:- day(date)

Example=day(22/7/2016)

Output=20

3. MONTH ():- यह Function DATE से Month निकालता है।

Syntax:- month(date)

Example= month (10/20/2011)

Output=10

4. year():- यह Function DATE से वर्ष निकालता है।

Syntax:- year(date)

Example= year (10/20/2011)

Output= 2011

5. today():- यह Function current date output में देता है।

=today()

Output:- 10/20/2011

6. Date():- यह Function दिये गये नम्बरों को दिनांक में बदलता है।

Syntax:- date(year,month,day)

Example:- date(2011,22,10)

Output= 22/10/211

Time Function:-

1. Time():- यह Function दिये गये hour, minute, second को समय में बदलता है।

Syntax:- Time(hour,minute,second)

Example:- Time(4,30,10)

Output:- 4:30 AM

2. Second():- यह Function दिये गये समय से सेकेंड आउटपुट में देता है।

yntax:- Second(Time)

Example:- Second(4:30)

Output:- 10

3. Minute():- यह Function दिये गये समय से मि टपुट में देता है।

yntax:- minute(Time)

Example:- minute (4:30)

Output:- 30

4. hour():- यह Function दिये गये समय से टपुट में देता है।

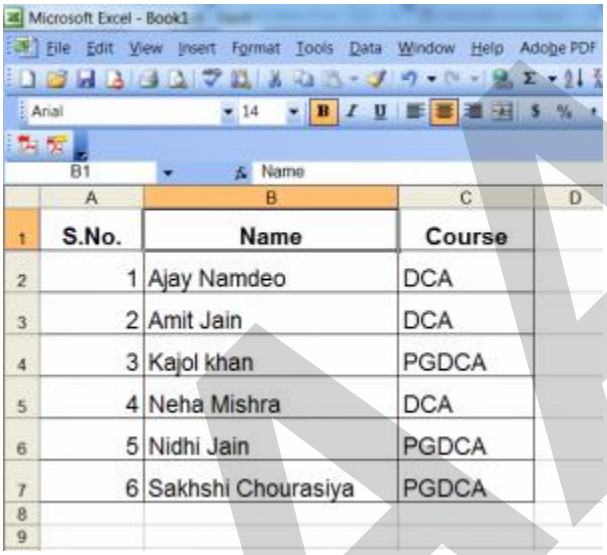
Syntax:- hour(Time)

Example:- hour(4:30)

Output:- 4

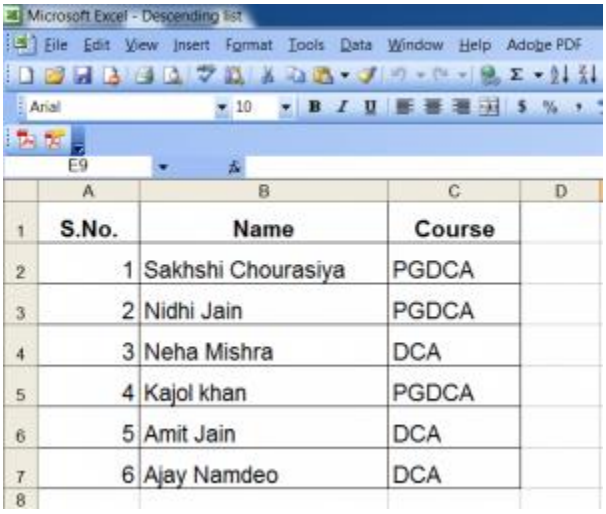
sort(शॉर्ट):- MS Excel में Sort प्रयोग एक Particular column ascending या descending order में व्यवस्थि करने के लिए किया है।

1. Ascending :- इसमें A To Z क्रम में किया है।



	A	B	C	D
1	S.No.	Name	Course	
2	1	Ajay Namdeo	DCA	
3	2	Amit Jain	DCA	
4	3	Kajol khan	PGDCA	
5	4	Neha Mishra	DCA	
6	5	Nidhi Jain	PGDCA	
7	6	Sakhshi Chourasiya	PGDCA	
8				
9				

2. Descending :- इसमें Z To A क्रम में किया है।



	A	B	C	D
1	S.No.	Name	Course	
2	1	Sakhshi Chourasiya	PGDCA	
3	2	Nidhi Jain	PGDCA	
4	3	Neha Mishra	DCA	
5	4	Kajol khan	PGDCA	
6	5	Amit Jain	DCA	
7	6	Ajay Namdeo	DCA	
8				

Filter (फिल्टर):- इस option का प्रयोग ने के लिये किया है। इसक दर दो sub- option होते है।
(1) Auto Filter
(2) Advance Filter

Auto Filter (फिल्टर):- इस प्रयोग करने से सभी Header Column में Combo Box है। जसमें searching tools पाये जाते है। उसमे से user अपनी जरूरत के अनुसार searching tool चुनता है।

Advance Filter (फिल्टर):- इस option द्वारा लिस्ट से condition नुसार कर दूसरे पर display करते है। इसमे प्रकार Range प्रयोग होता है।
(1) List Range
(2) Criteria Range
(3) Output Range

(1) List Range (लिस्ट रेन्ज):- यह वह रेन्ज होती है। जहाॅ से Records है।
(2) Criteria Range (रिया रेन्ज):- यह वह range होती है। जहाॅ पर condition है। इसी condition नुसार लिस्ट रेन्ज से ल्टर हो है।
(3) Output Range (टपुट रेन्ज):- यह वह रेन्ज होती है। जहाॅ पर output display होता है। range criteria रेन्ज नुसार लिस्ट रेन्ज से फिल्टर होते है। वह सभी records इसी रेन्ज मे प्रिन्ट होता है।

Practically Approach:-
1. prepare a data list
2. copy header row
3 . Paste it twice at different location

a. first for criteria range
b. second for output range

4 set the condition in criteria range for filtering data
5 set the cell pointer at first cell of list range
6 select advanced filter option from filter them it display a dialog box tell criteria range ,output range and press ok button alter that you will see the filtered records in output range.

Form( ):- फार्म से user interface बनाया हैं। जिसकी सहायता से व्यवस्थित किया जाता है। फार्म सबसे पहले cell Pointer को पहली cell में रखा है। और उसक इस पर click किया है।

subtotal(सबटोटल):- यह ऑप्शन वहाॅ पर प्रयोग किया है। जहाॅ पर एक नाम से कई रिकार्ड होते है। और वह financial activities से सम्बि हो। जैसे कि एक कम्पनी में कई सेल्समैन कई item अलग-अलग जगहो पर है। वहाॅ पर हर सेल्समैन total और Grand total निकालन की जरूरत पडती है। इसके लिए हम सबसे पहले रिकाड ascending order में sort कर लेते है। उसक लिस select करते हैं और इस ऑप्शन पर click करे।

Validation(शन):- इस द्वारा सीट के अन्दर कार्य पद्वति के नियम स्थापित किये जाते है। जैसे हम अपनी कम्पनी employees 5000 से कम और 10000 के बीच वेतन देते है तो हम यह चाहते है कि salary column में 5000 से कम और 10000 से ज्यादा Entry user से न हो जाये तो इसके लिये salary column में validation लगा

Table(बल):- इस प्रयोग वहाॅ किया है। जहाॅ पर financial परिणाम हो जैसे से लोन ले महीने में किस रेट से, करनी पड इसके लिये एक टेबल कर देख लेते है।

Consolidation(शन):- इस प्रयोग वहाॅ पर किया है। जहाॅ पर दो या दो से Locations value total या average निकालना हो।

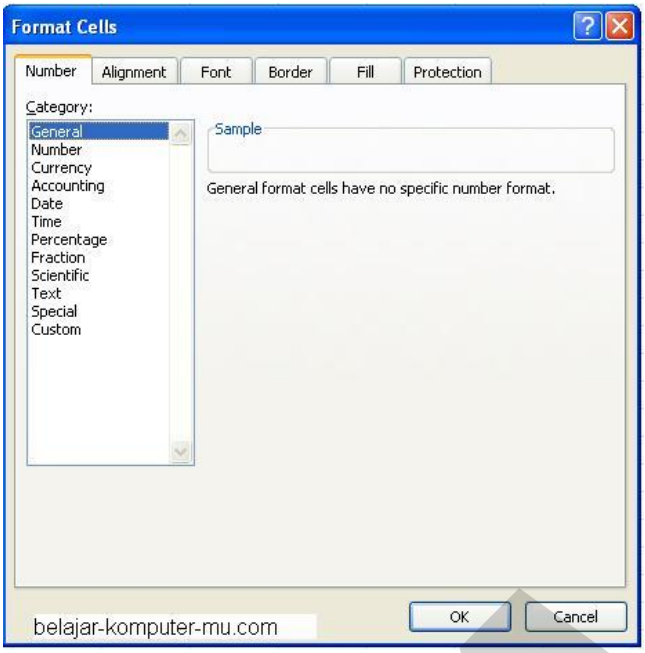
Pivot Table(पाइवोट बल):- इस द्वारा data sheet की summery report तैयार है। जिसमें किसी values column & row wise total एवं grand total कर सकते है।

किसी एक्सेल वर्कशीट में प्रकार भरे जा सकते हैं किसी सैल में किसी विशेष प्रकार भरन लिए हमें उस सैल को वह स्टोर करने और तरह से लिए फॉर्मेट करना पड़ता हैं सैलों ॉर्मेट करने से पहले डाटा टाइप को ठीक से समझ लेना आवश्यक हैं|

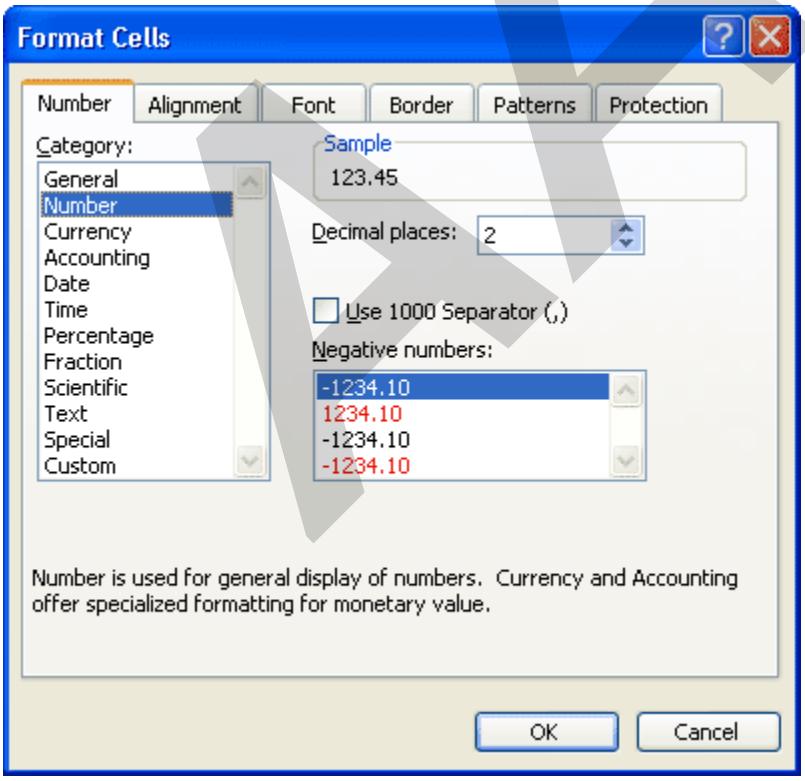
Data Type सेट करने के लिये रो काॅलम या ऐरिया को सिलेक्ट करना होता है। इसक टाईप को सेट करना होता है। एक्सेल में बारह प्रकार टाईप होते है। लेकिन नमें से टाइप ही महत्वपूर्ण हैं एक्सेल में मुख्यतः नलिि टाइप उपयोग में लाये हैं है।

General :- इस डेटा टाईप का प्रयोग सभी प्रकार टोर करने के लिए किया है। यह एक ॅमन टाईप है।

जैसे – A to Z अक्षर, 0 to 9 नम्बर, चिन्ह, नांक, समय |

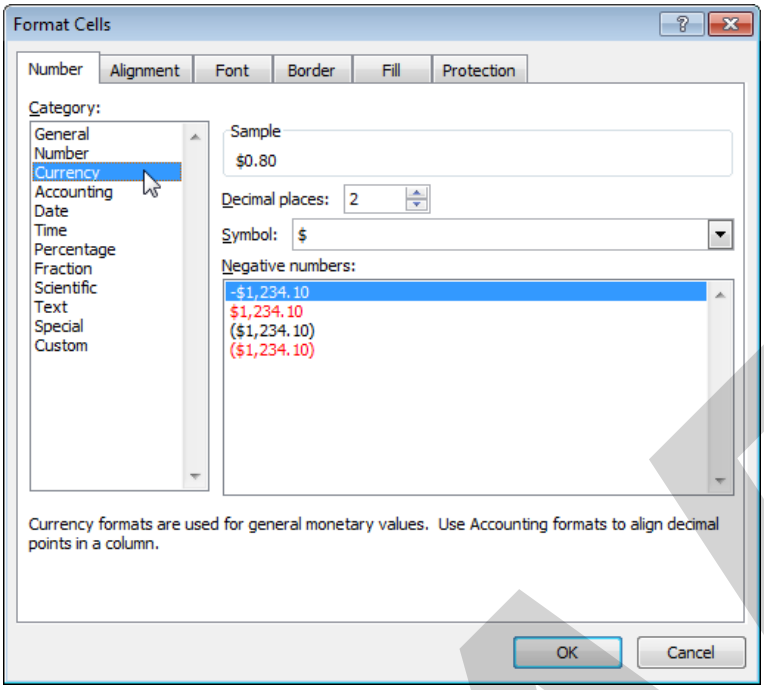


Number:- इस टाईप का प्रयोग वल (0 से 9 तक), दशमलव सेट करने के लिए किया हैं।



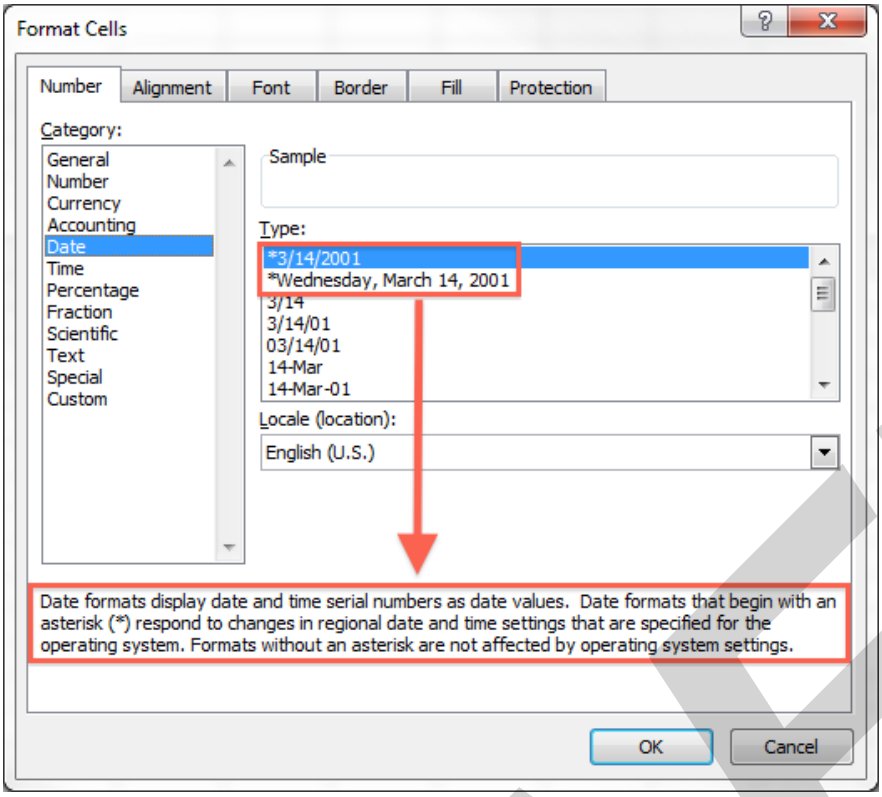
Currency :- इस डेटा टाईप का प्रयोग करेंसी से सम्बंधित फॉर्मेट बदलने के लिए किया जाता हैं इसमें दशमलव एवं करेंसी चिन्ह सेट करना होता है।

जैसे – Rs. 15,000, $500, Rs. 1500.00, Rs. 15000

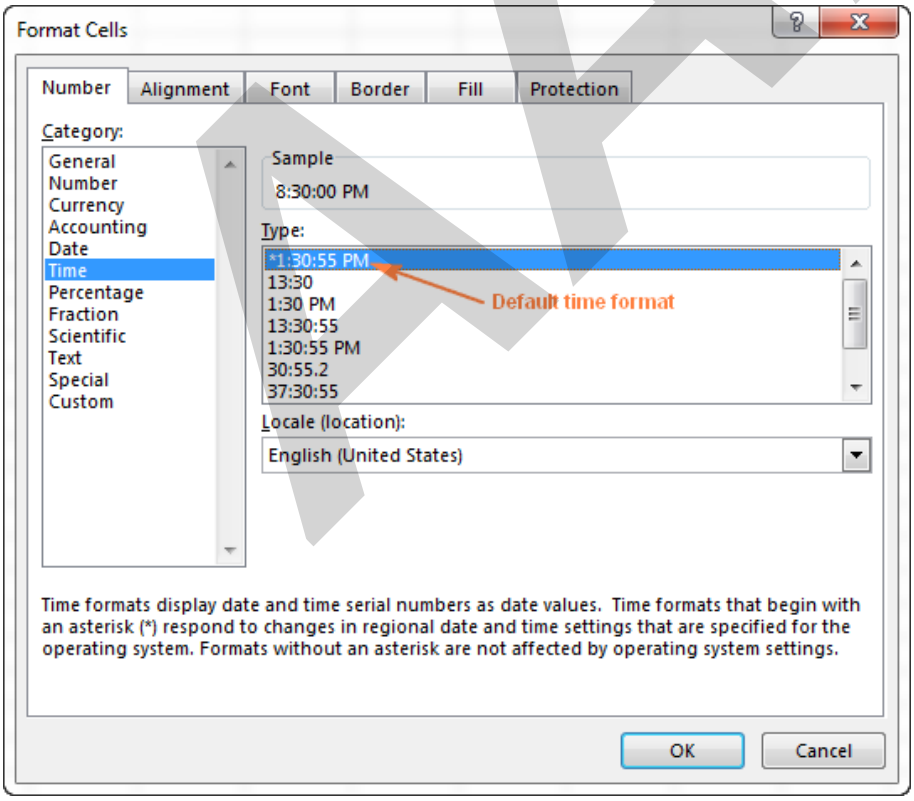


Date :- इस डेटा टाईप का प्रयोग डेट से सम्बंधित फॉर्मेट को बदलने के लिए किया जाता हैं इसमें फॉर्मेट सिलेक्ट करना होता है।

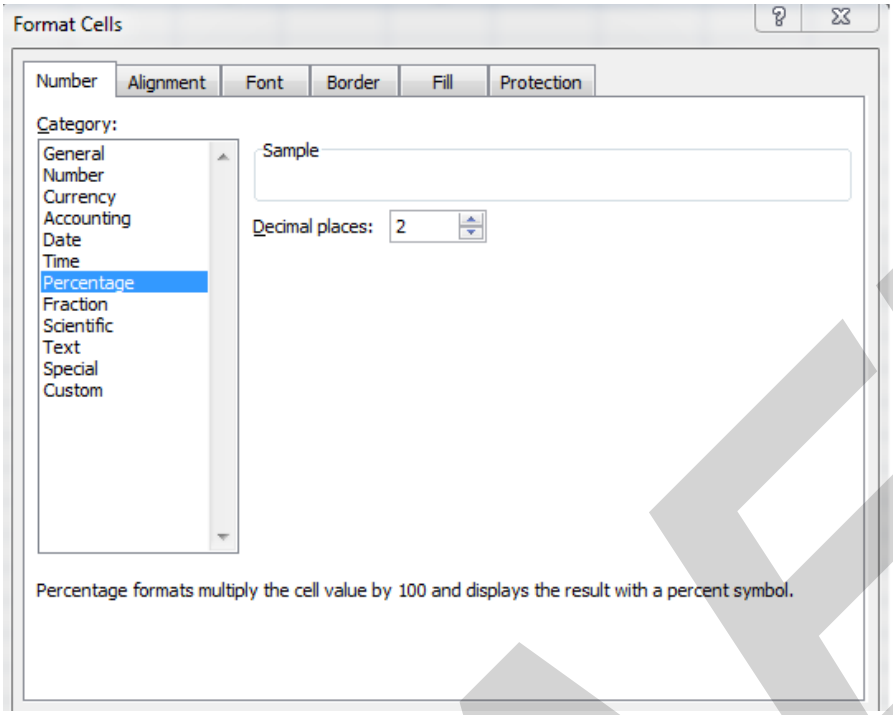
जैसे – dd/mm/yyyy, mm/dd/yyyy, yyyy/dd/mm, 23-July-2016, 23 july.



Time :- इस टाईप का प्रयोग टाईम से सम्बंधित फॉर्मेट दर्शाने के लिए किया जाता हैं इसमें टाईम फॉर्मेट सिलेक्ट करना होता है।



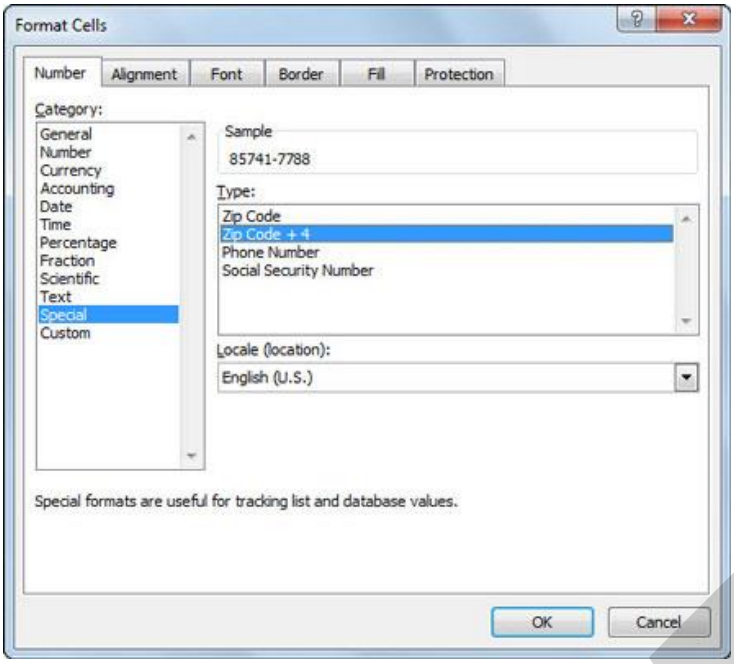
Percentage:- इस टाईप का प्रयोग Percentage से सम्बंधि ॉर्मेट बदलने के लिए किया हैं इसमें शमलव सेट करना होता है। इसमें Percentage चिन्ह है।



Scientific:- इस टाईप में नंबर प्रकार स्टोर किया है। इसमें दशमलव सेट करना होता होता है।

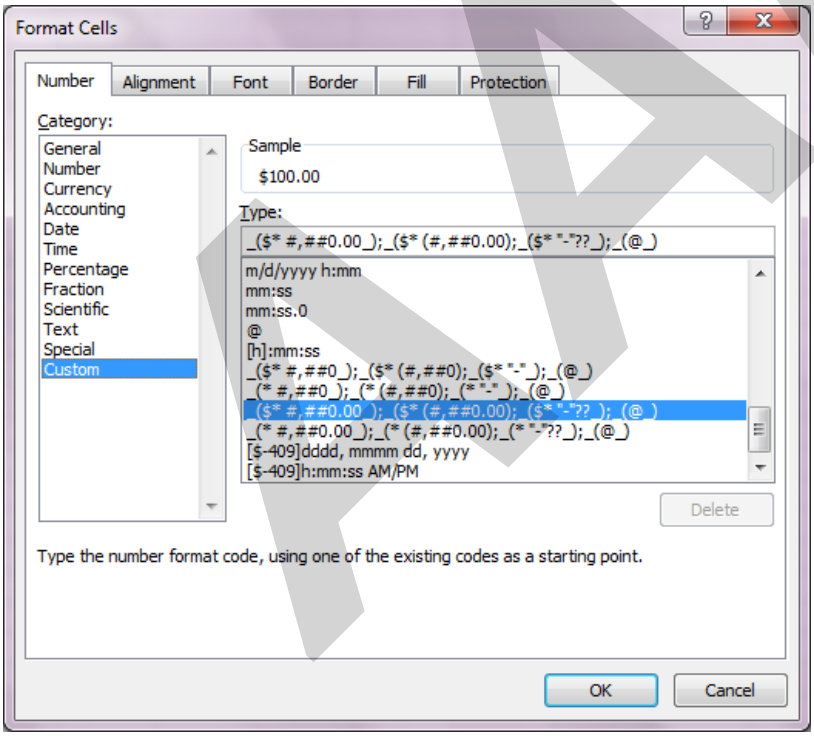
Text :- इस डेटा टाईप का प्रयोग टेक्स से सम्बंि ॉर्मेट बदलने के लिए किया हैं इसमे तीये ायें नही सकती है।

Special :- इस टाईप का प्रयोग प्रकार स्टोर करने के लिए किया है। जिप कोड एवं नंबर स्टोर किया है।



Accounting:- इस डेटा टाईप का प्रयोगअ से सम्बंि स्टोर करने के लिए किया है। इसमें दशमलव को को सेट करना होता है एवं करेंसी न्ह पडता है।

Custom:- इस डेटा टाईप में आवश्यकता नुसार प्रकार को सेट कर सकते है।



Excel Data में करने के लिए प्रयोग किया है। से समझने में आसानी होती है। एक्सेल मे इसको के द्वारा बनाया है।

Excel में चार्ट बनानाः- इसमें चाट चार स्टैप में बनाया है। है।

Step First:-

Insert menu → Chart

Or

Standard Tool Bar → Click on Chart Button

ं बटन पर क्लिक करने पर chart wizard नाम का डायलाॅग बॉक्स है। इसमें प्रकार है और Next Button पर क्लिक करते है। एक्सेल में चौदह प्रकार के चाट होते है।

Step Second:-

Second Step में लिये डाटाबेस को चुनते है। इस डायलाॅग बॉक्स में होते है। प्रथम टेब में डाटा रेंज है एवं यह चुनते है। रो में है या काॅलम में दूसरे टेब series का होता है। इसमें सीरीज नाम एवं उसकी रेंज देते है। इसमें नई सीरीज सकता है। एवं पहले से उपस्थित सीरीज को डिलिट किया जा सकता है। एवं X Axis पर जो डाटा करना है। उसकी रेंज है और Next Button पर क्लिक करते है।

Step Third: –

इस डायलाॅ बाक्स में होते है। सहायता से सें हैं यह है।

1. Titles:- इसमें टाईटल X and Y Axis टाईटल देते है।

2. Axes: इस टेब से यह र्धारित करते है कि चाट में X and Y Axes पर लेबिल करना है या नही।

3. Grid lines :- इस टेब में चार्ट में Grid lines र्धारित किया जाता है।

4. Legend :- इस टेब में चार्ट में legend र्धारित किया है कि Legend में कहाॅ पर रना है

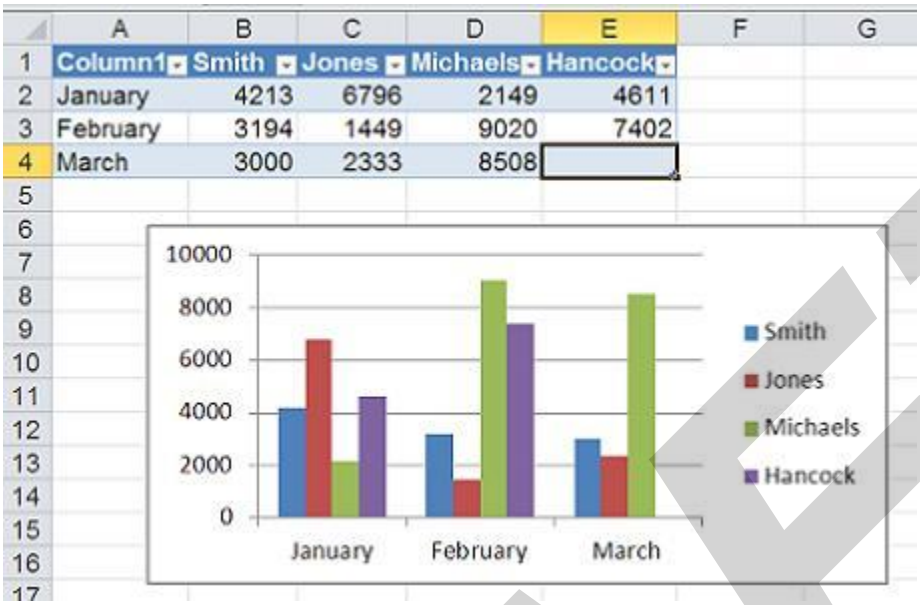
5. Data label :- chart में लेबिल के तौर पर क्य कराना है। इसको है।

6. Data Table:- Chart टेबिल को शो करना है या नही इसको सेट किया है।

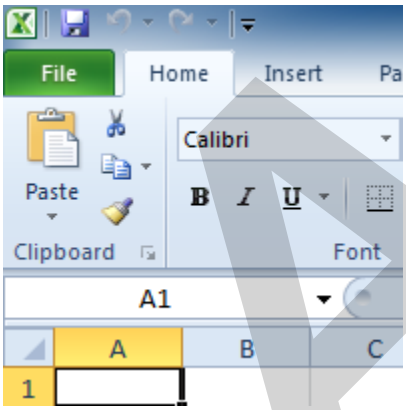
इसी प्रकार सभी सेटि करन Next Button पर क्लिक करते है।

Step Fourth:-

इस स्टेप में यह निर्धारित किया है। को कहाॅ पर लोक करना है वर्तमान सीट पर या नई सीट पर। इसक Finish Button पर क्लिक करते ही निर्माण हो जाता है। इसक उस पर राईट क्लिक करके उसकी Formatting सकती है।



Introduction



Excel is a **spreadsheet program** that allows you to store, organize, and analyze information. In this lesson, you will learn your way around the Excel 2010 environment, including the new **Backstage view**, which replaces the Microsoft Office button menu from Excel 2007.

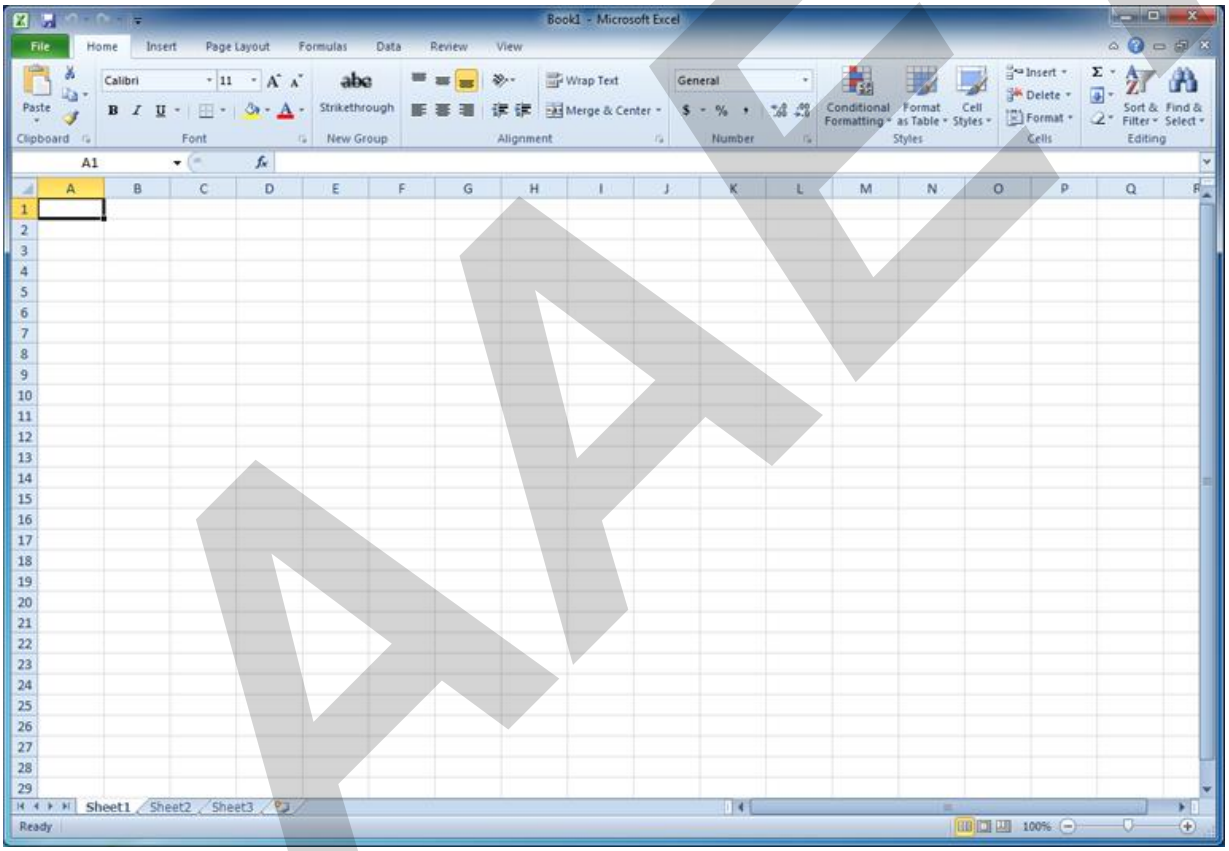
We will show you how to use and modify the **Ribbon** and the **Quick Access toolbar**, as well as how to **create new workbooks** and **open** existing ones. After this lesson, you will be ready to get started on your first workbook.

Getting to know Excel 2010

The **Excel 2010** interface is similar to Excel 2007. There have been some changes we'll review later in this lesson, but if you're new to Excel first take some time to learn how to navigate an Excel workbook.

The Excel interface

Click the buttons in the interactive below for an overview of how to navigate an Excel workbook.



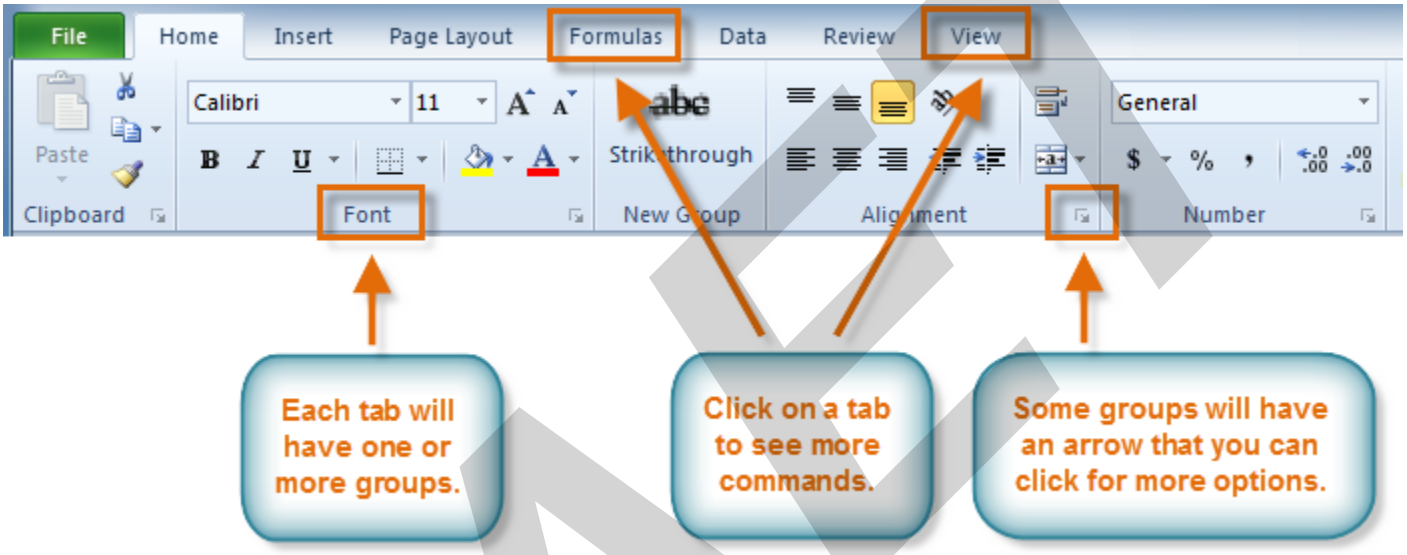
Working with your Excel environment

The **Ribbon** and **Quick Access toolbar** are where you'll find the commands you need to perform common tasks in Excel. If you are familiar with Excel 2007, you will find that the main

difference in the Excel 2010 Ribbon is that commands such as Open and Print are now housed in **Backstage view**.

The Ribbon

The Ribbon contains multiple **tabs**, each with several **groups** of commands. You can add your own tabs that contain your favorite commands.

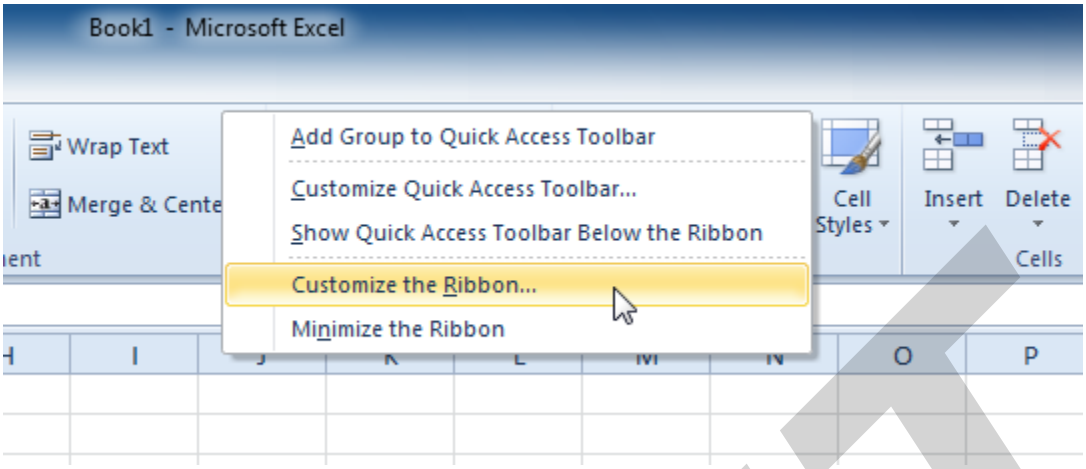


Certain programs—such as **Adobe Acrobat Reader**—may install additional tabs to the Ribbon. These tabs are called **add-ins**.

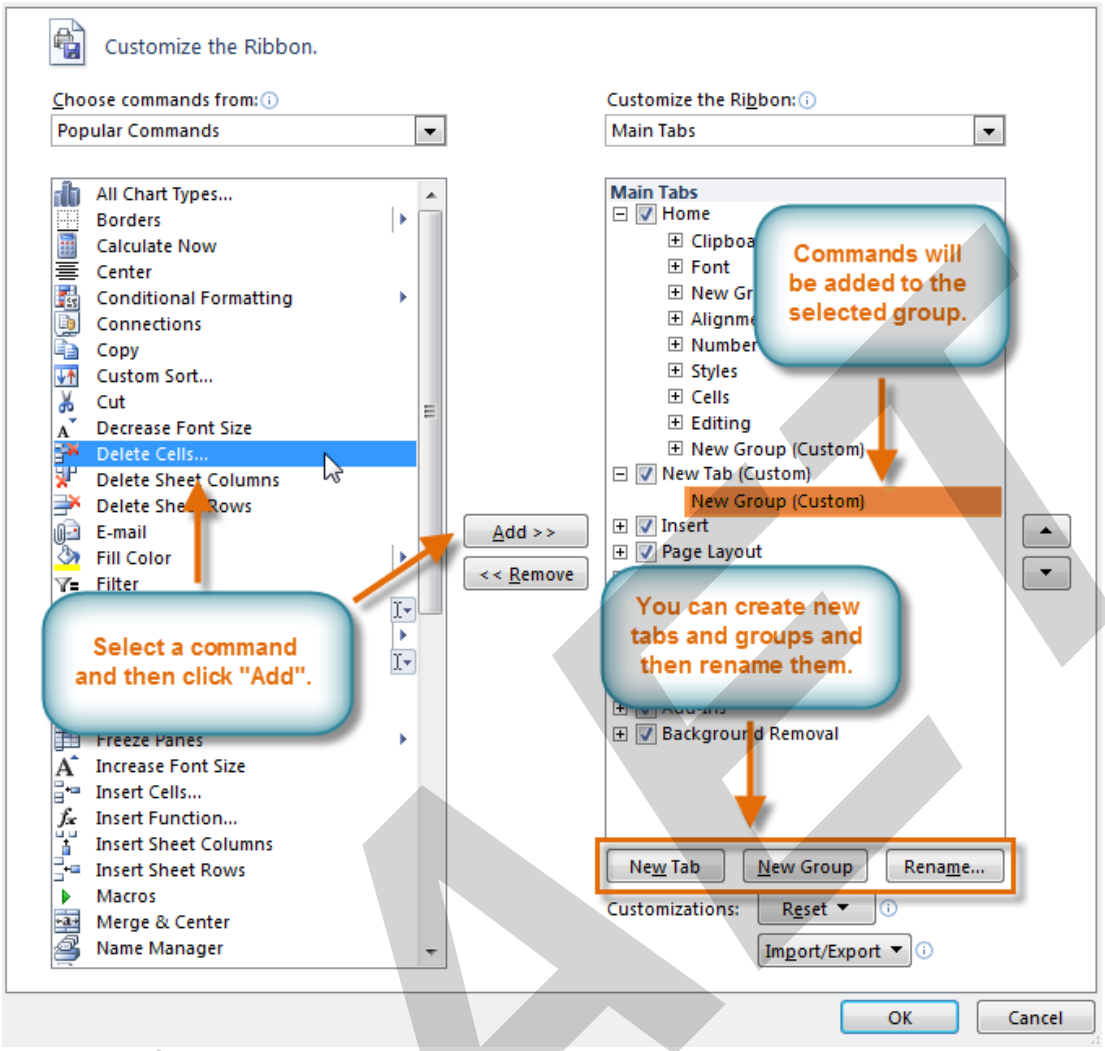
To customize the Ribbon:

You can customize the Ribbon by creating your own **tabs** that house your desired commands. Commands are always housed within a **group**, and you can create as many groups as you need to keep your tabs organized. You can also add commands to any of the default tabs as long as you create a custom group within the tab.

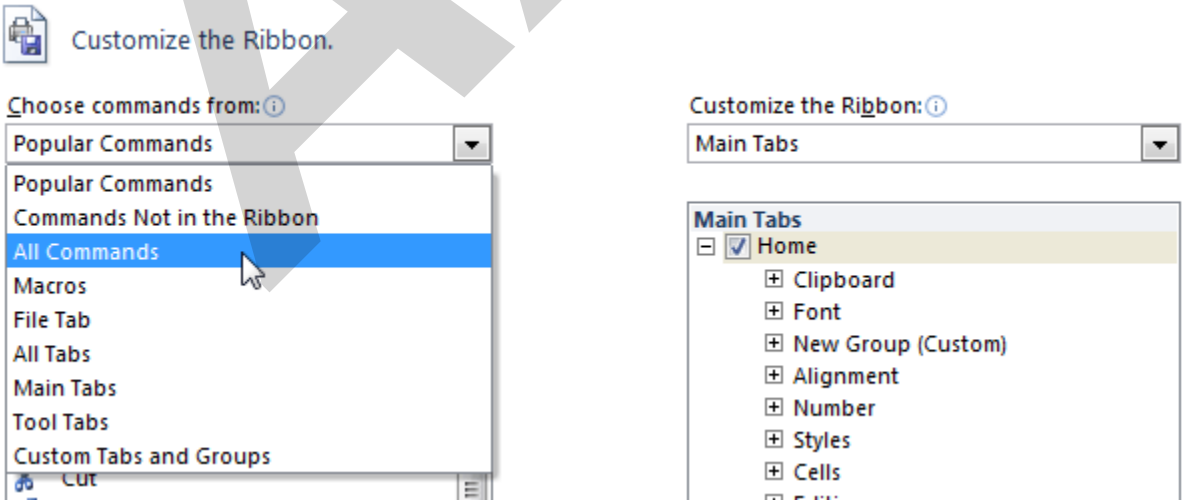
1. Right-click the Ribbon, then select **Customize the Ribbon**. A **dialog box** will appear.



2. Click **New Tab**. A new tab will be created with a new group inside it.
3. Make sure the new group is selected.
4. Select a command from the list on the left, then click **Add**. You can also drag commands directly into a group.
5. When you are done adding commands, click **OK**.



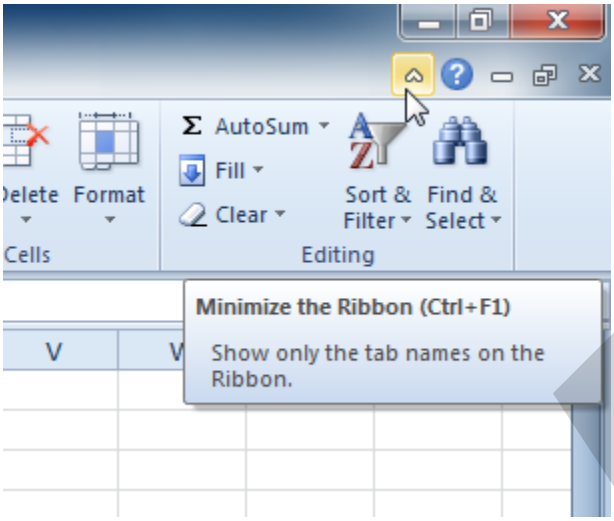
If you do not see the command you want, click the **Choose commands** drop-down box and select **All Commands**.



To minimize and maximize the Ribbon:

The Ribbon is designed to be easy to use and responsive to your current tasks; however, if you find that it's taking up too much of your screen space, you can **minimize** it.

1. Click the **arrow** in the upper-right corner of the Ribbon to minimize it.



2. To maximize the Ribbon, click the arrow again.

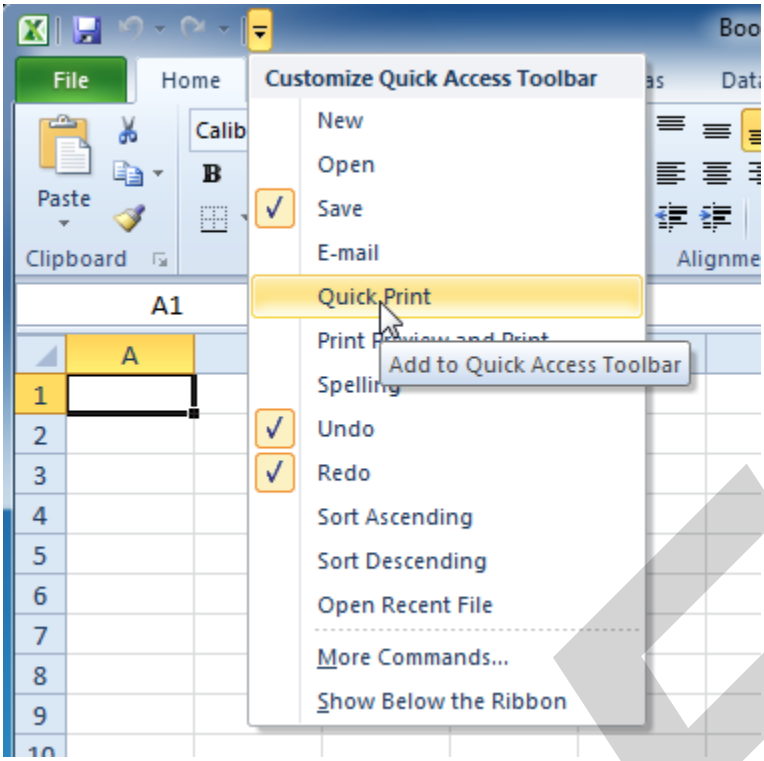
When the Ribbon is minimized, you can make it reappear by clicking a tab. However, the Ribbon will disappear again when you're not using it.

The Quick Access toolbar

The **Quick Access toolbar**, above the Ribbon, lets you access common commands no matter which tab you are on. By default, it shows the **Save**, **Undo**, and **Repeat** commands. You can add other commands to make it more convenient for you.

To add commands to the Quick Access toolbar:

1. Click the **drop-down arrow** to the right of the **Quick Access toolbar**.
2. Select the **command** you want to add from the drop-down menu. To choose from more commands, select **More Commands**.

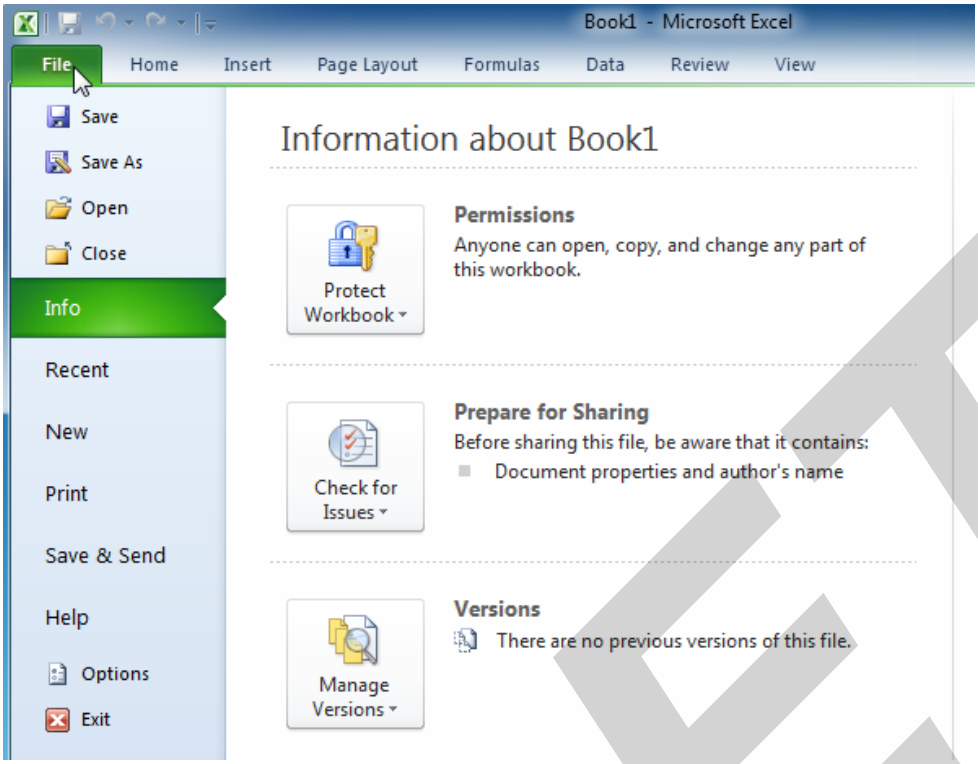


Backstage view

Backstage view gives you various options for saving, opening a file, printing, and sharing your document. It is similar to the **Microsoft Office button menu** from Excel 2007 and the **File menu** from earlier versions of Excel. However, instead of just a menu it's a full-page view, which makes it easier to work with.

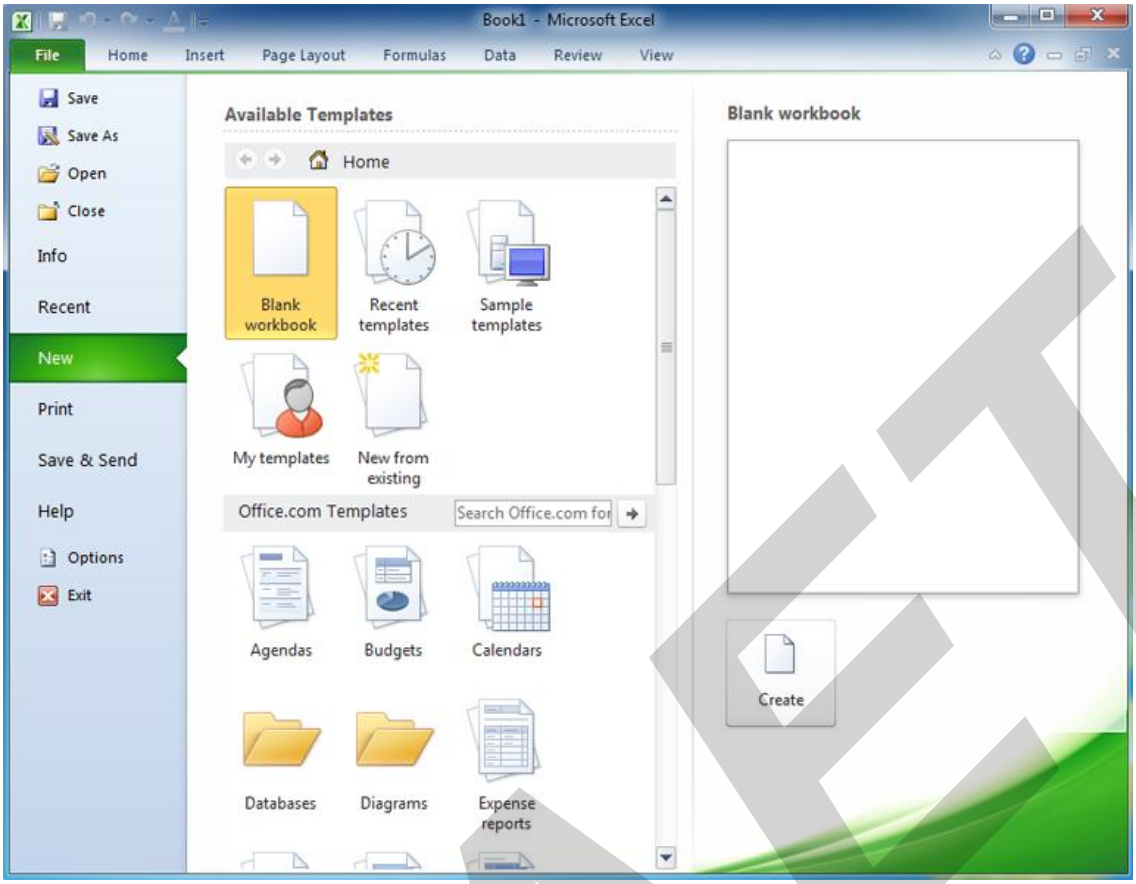
To get to Backstage view:

1. On the Ribbon, click the **File** tab.



2. Choose your desired option, or return to your workbook by clicking any tab on the Ribbon.

Click the buttons in the interactive below to learn about the different things you can do in Backstage view.

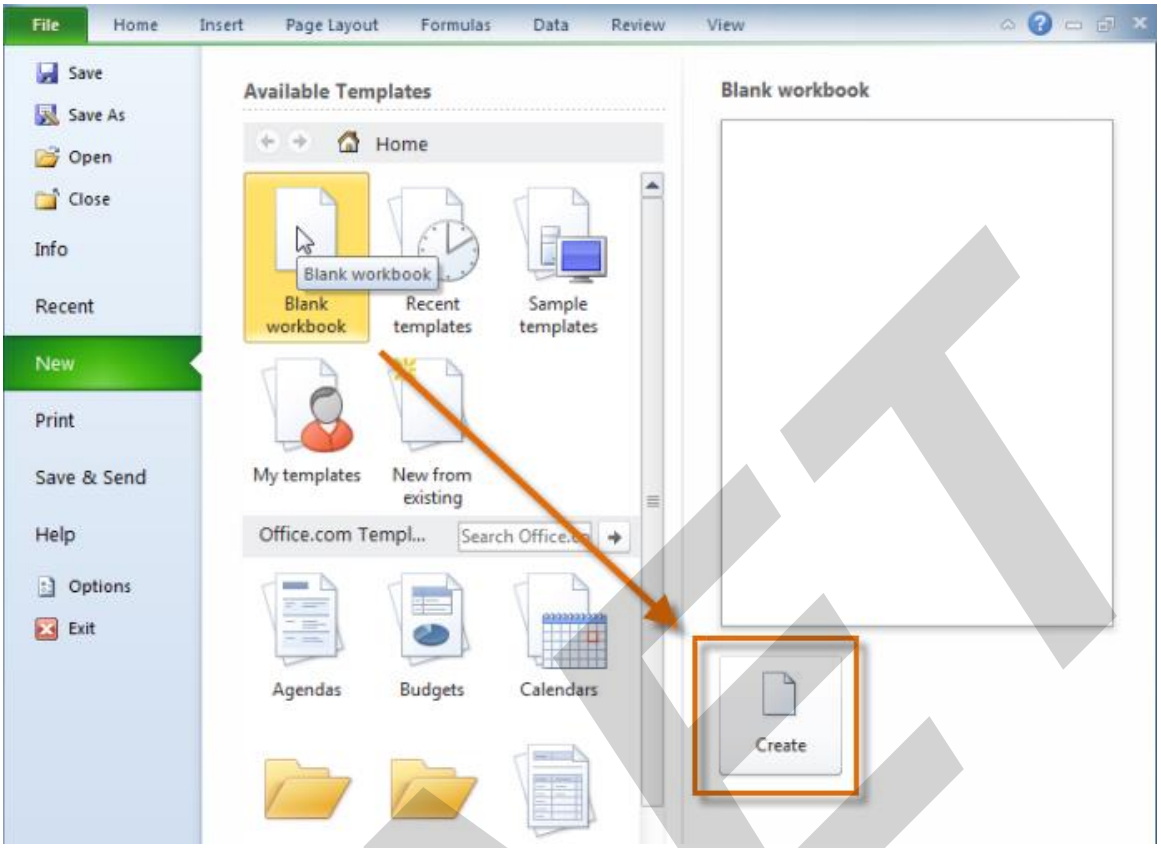


Creating and opening workbooks

Excel files are called **workbooks**. Each workbook holds one or more **worksheets** (also known as spreadsheets).

To create a new blank workbook:

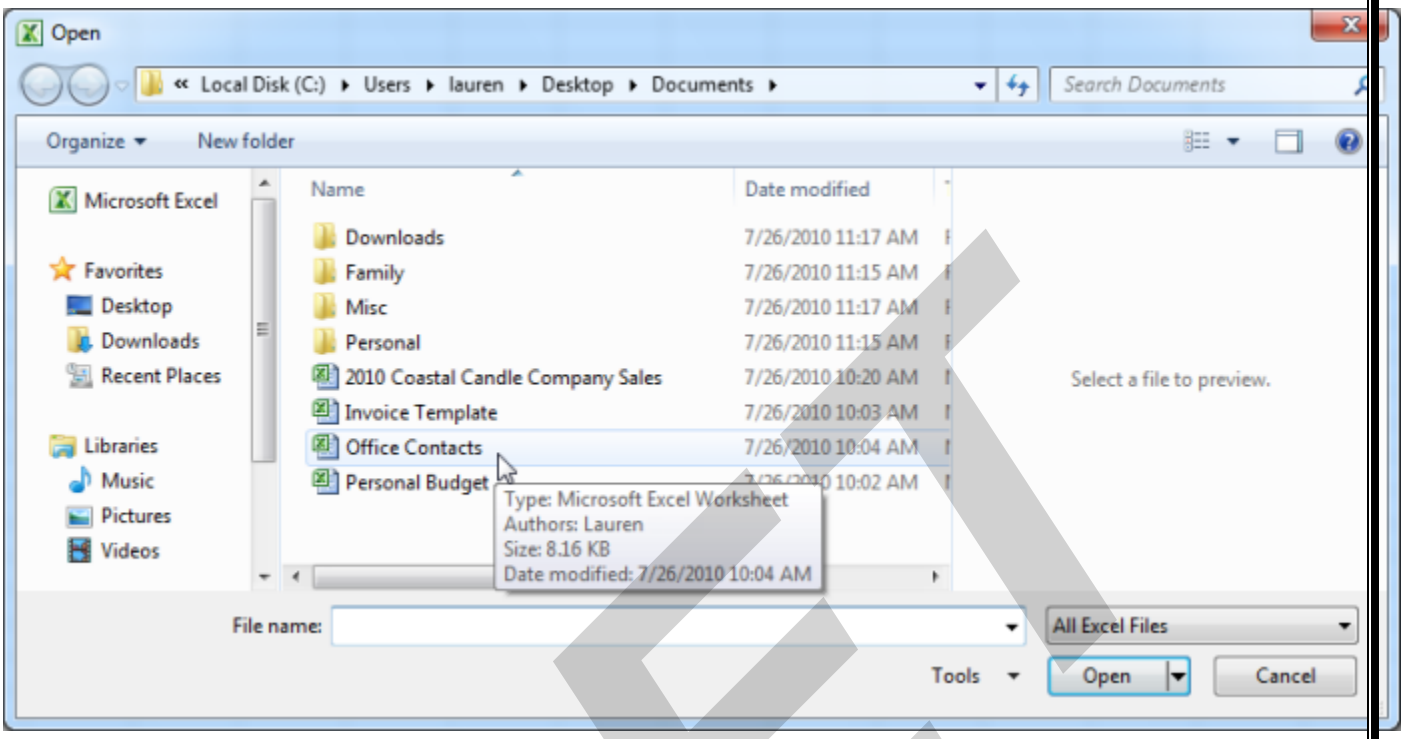
1. Click the **File** tab. This takes you to **Backstage view**.
2. Select **New**.
3. Select **Blank workbook** under **Available Templates**. It will be highlighted by default.
4. Click **Create**. A new blank workbook appears in the Excel window.



To save time, you can create your document from a **template**, which you can select under Available Templates. We'll talk more about this in a later lesson.

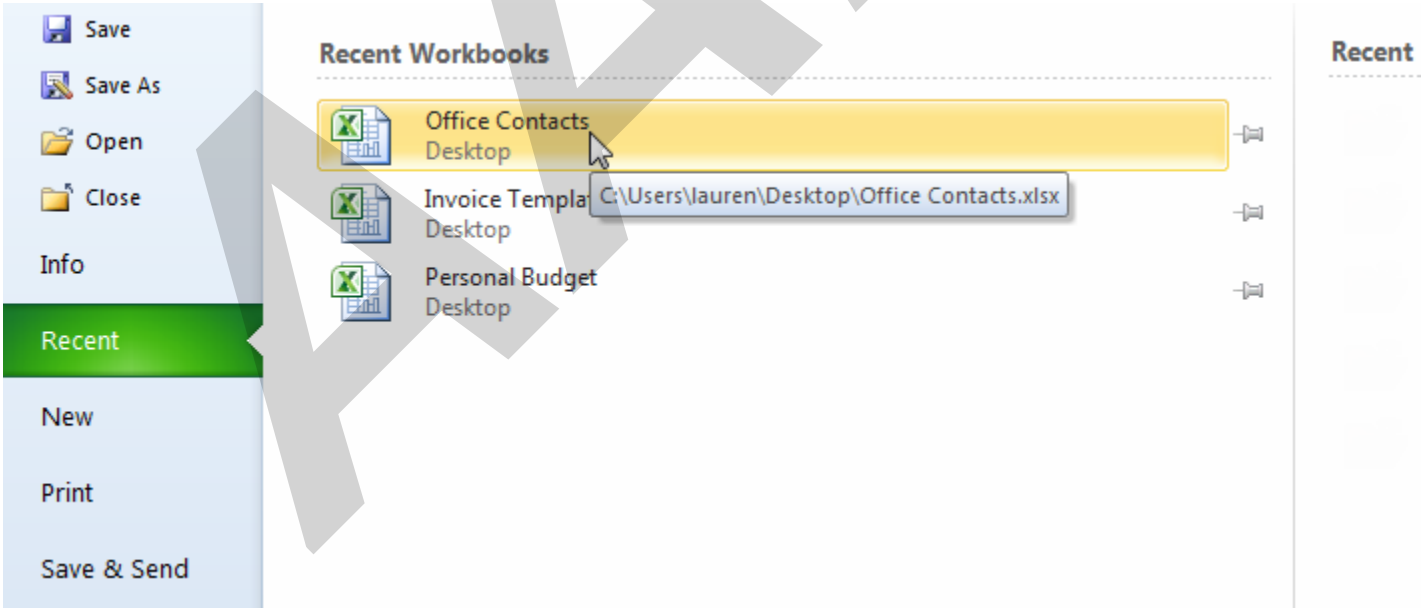
To open an existing workbook:

1. Click the **File** tab. This takes you to **Backstage view**.
2. Select **Open**. The Open dialog box appears.



3. Select your desired workbook, then click **Open**.

If you have opened the existing workbook recently, it may be easier to choose **Recent** from the **File tab**instead of **Open** to search for your workbook.

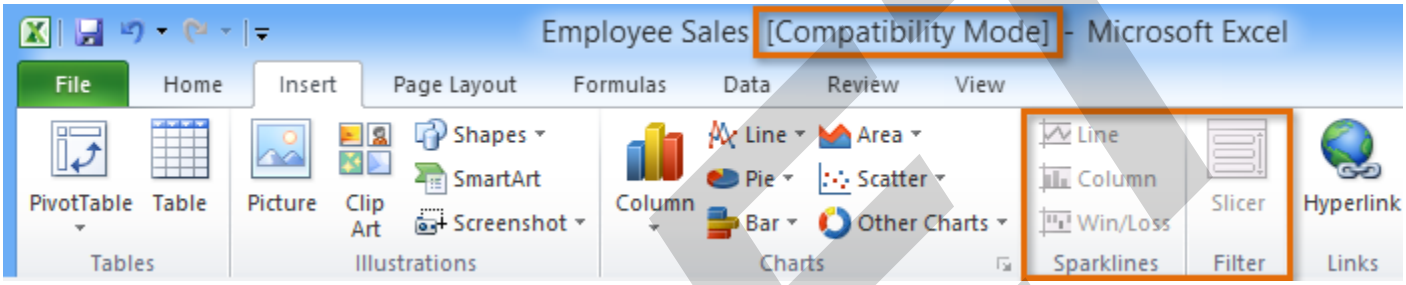


Compatibility mode

Sometimes you may need to work with workbooks that were created in earlier versions of Microsoft Excel, such as Excel 2003 or Excel 2000. When you open these types of workbooks, they will appear in **Compatibility mode**.

Compatibility mode **disables** certain features, so you'll only be able to access commands found in the program that was used to create the workbook. For example, if you open a workbook created in Excel 2003 you can only use tabs and commands found in Excel 2003.

In the image below, the workbook has opened in Compatibility mode. You can see that the sparklines and slicers features have been disabled.



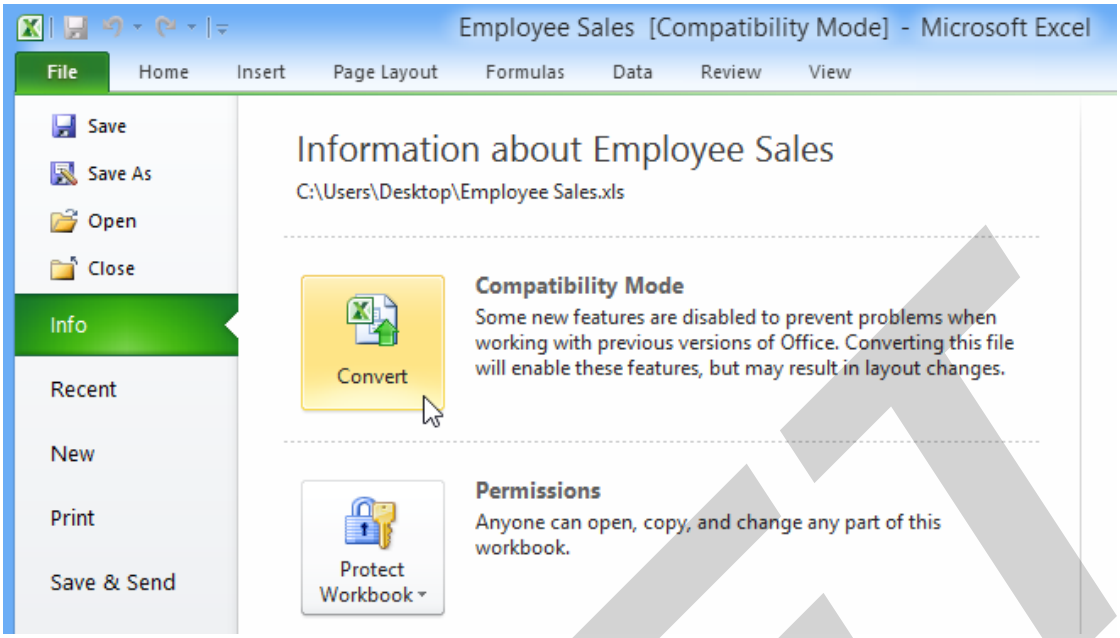
To exit Compatibility mode, you'll need to **convert** the workbook to the current version type. However, if you're collaborating with others who only have access to an earlier version of Excel, it's best to leave the workbook in Compatibility mode so the format will not change.

To convert a workbook:

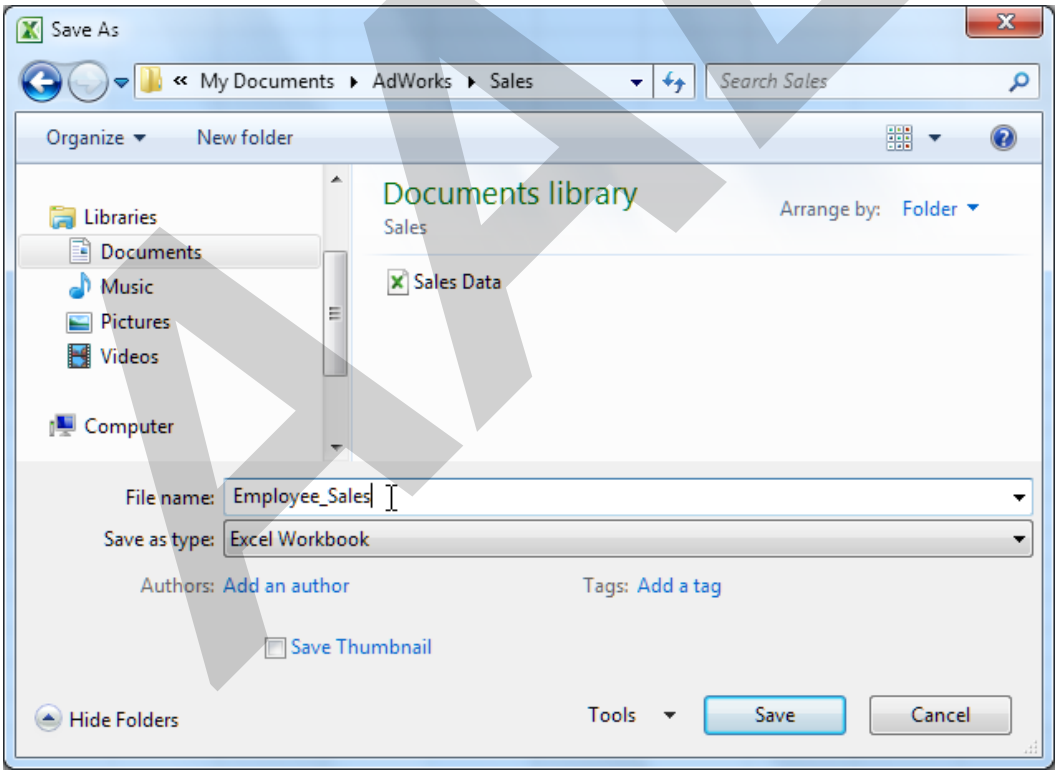
If you want access to all of the Excel 2010 features, you can **convert** the workbook to the 2010 file format.

Note that converting a file may cause some changes to the **original layout** of the workbook.

1. Click the **File** tab to access Backstage view.
2. Locate and select the **Convert** command.



3. The **Save As** dialog box will appear. Select the **location** where you want to save the workbook, enter a **file name** for the presentation, and click **Save**.

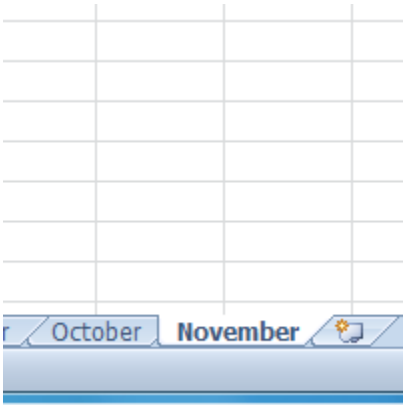


4. The workbook will be converted to the newest file type.

Challenge!

1. **Open** Excel 2010 on your computer. A new blank workbook will appear on the screen.
2. Try minimizing and maximizing the **Ribbon**.
3. Click through all of the **tabs**, and notice how the Ribbon options change.
4. Try switching **page views**.
5. Add any commands you want to the **Quick Access toolbar**.
6. **Close** Excel without saving the workbook.

Introduction



Every Excel **workbook** contains at least one or more **worksheets**. If you are working with a large amount of related data, you can use worksheets to help organize your data and make it easier to work with.

In this lesson, you will learn how to **name** and **add color** to worksheet tabs, as well as how to **add**, **delete**, **copy**, and **move** worksheets. Additionally, you will learn how to **group** and **ungroup** worksheets and **freeze** columns and rows in worksheets so they remain visible even when you're scrolling.

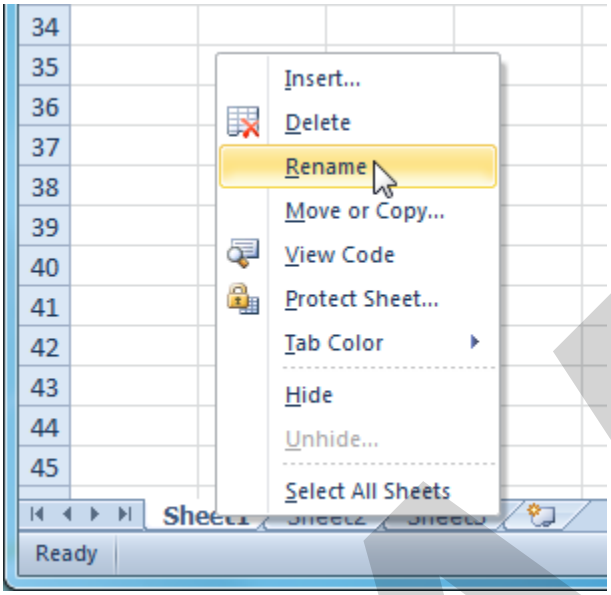
Introduction to worksheets

When you open an Excel workbook, there are **three worksheets** by default. The default names on the worksheet tabs are **Sheet1**, **Sheet2**, and **Sheet3**. To organize your workbook and make it easier to navigate, you can rename and even color code the worksheet tabs. Additionally, you can insert, delete, move, and copy worksheets.

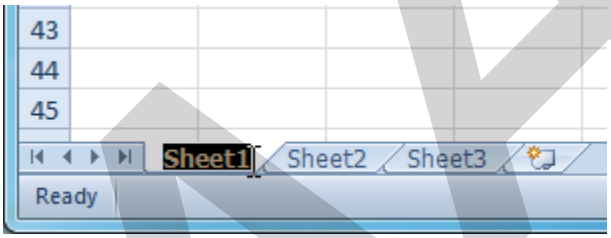
Optional: You can download this **example** for extra practice.

To rename worksheets:

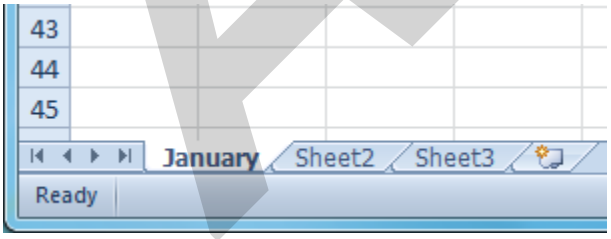
1. Right-click the **worksheet tab** you want to rename. The **worksheet** menu appears.
2. Select **Rename**.



3. The text is now highlighted by a black box. Type the name of your worksheet.

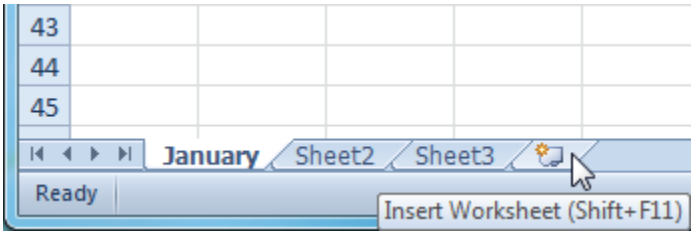


4. Click anywhere outside the tab. The worksheet is renamed.



To insert new worksheets:

Click the **Insert Worksheet** icon. A new worksheet will appear.

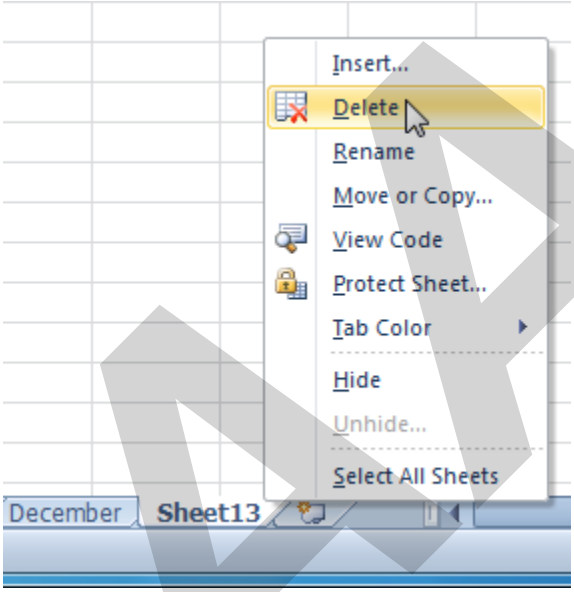


You can change the setting for the default number of worksheets that appear in Excel workbooks. To access this setting, go into **Backstage view** and click **Options**.

To delete worksheets:

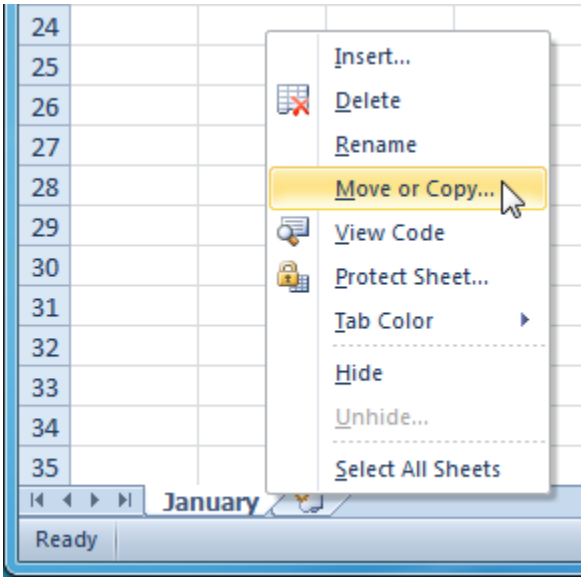
Worksheets can be deleted from a workbook, including those containing data.

1. Select the worksheets you want to delete.
2. Right-click one of the selected worksheets. The **worksheet** menu appears.
3. Select **Delete**. The selected worksheets will be deleted from your workbook.

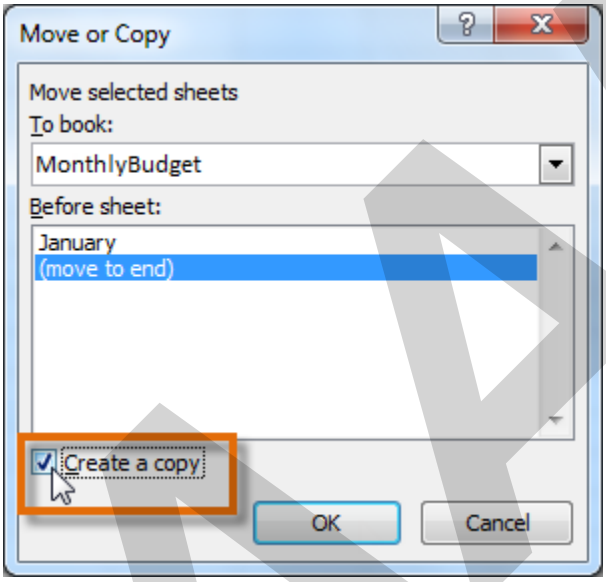


To copy a worksheet:

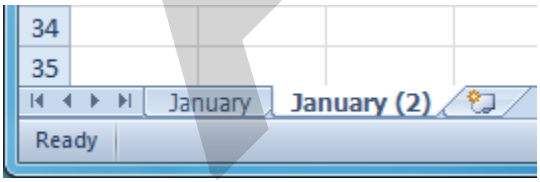
1. Right-click the worksheet you want to copy. The **worksheet** menu appears.
2. Select **Move or Copy**.



3. The **Move or Copy** dialog box appears. Check the **Create a copy** box.

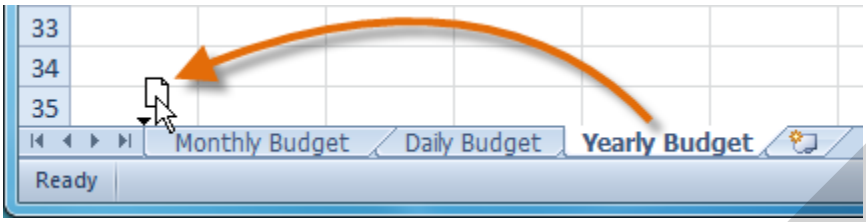


4. Click **OK**. Your worksheet is copied. It will have the same title as your original worksheet, but the title will include a version number, such as **January (2)**.

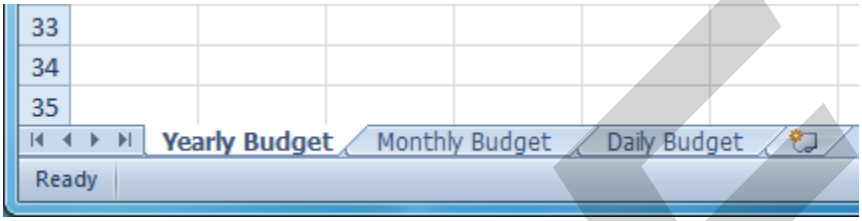


To move a worksheet:

1. Click the worksheet you want to move. The mouse will change to show a small worksheet icon .
2. Drag the worksheet icon until a small black arrow appears where you want the worksheet to be moved.



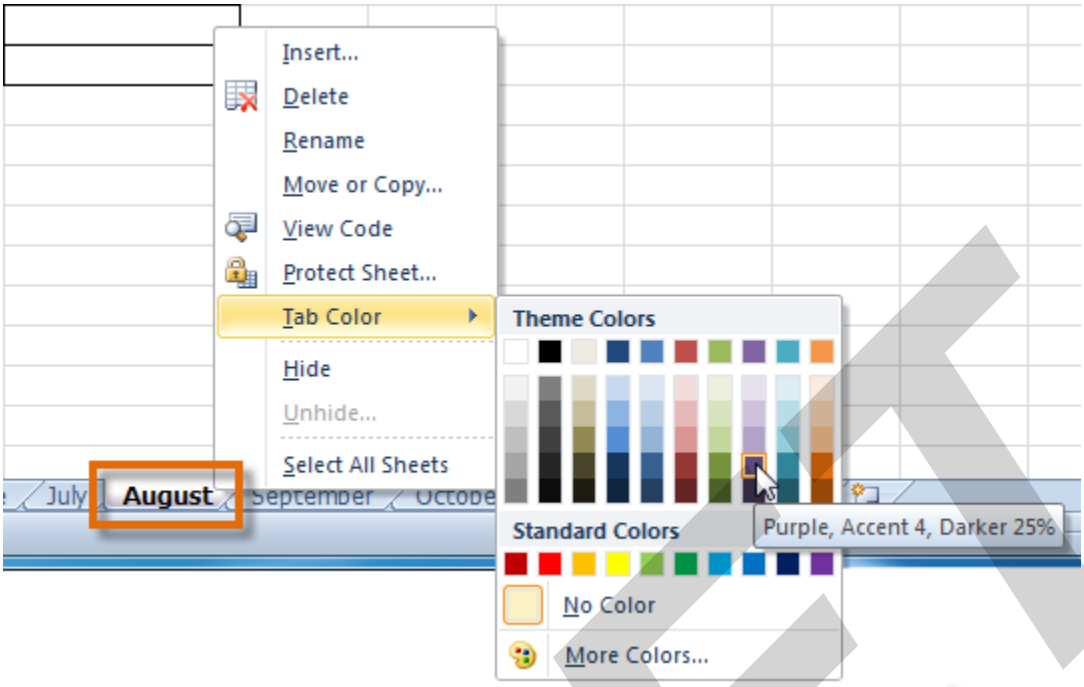
3. Release your mouse, and the worksheet will be moved.



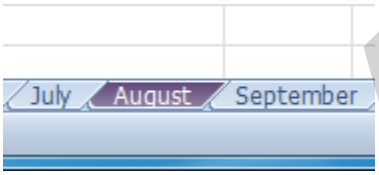
To color code worksheet tabs:

You can color worksheet tabs to help organize your worksheets and make your workbook easier to navigate.

1. Right-click the worksheet tab you want to color. The **worksheet** menu appears.
2. Select **Tab Color**. The **color** menu appears.
3. Select the color you want to change your tab.



4. The tab color will change in the workbook. If your tab still appears white, it is because the worksheet is still selected. Select any other worksheet tab to see the color change.

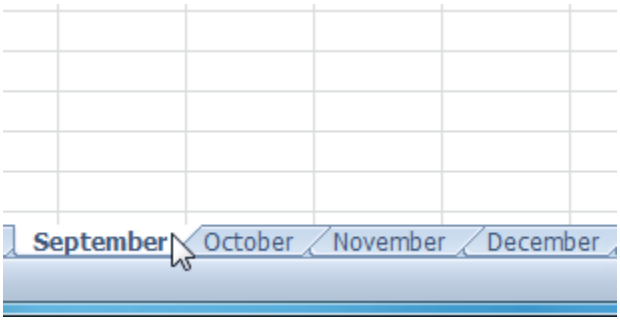


Grouping and ungrouping worksheets

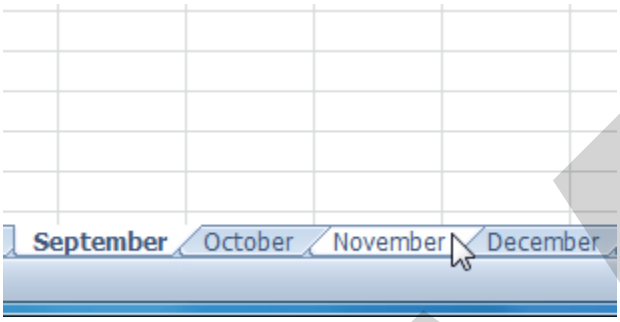
You can work with each worksheet in a workbook individually, or you can work with multiple worksheets at the same time. Worksheets can be combined into a **group**. Any changes made to one worksheet in a group will be made to every worksheet in the group.

To group worksheets:

1. Select the **first worksheet** you want in the group.



2. **Press and hold the Ctrl key** on your keyboard.
3. Select the **next worksheet** you want in the group. Continue to select worksheets until all of the worksheets you want to group are selected.



4. **Release the Ctrl key**. The worksheets are now grouped. The worksheet tabs appear white for grouped worksheets.

While worksheets are grouped, you can navigate to any worksheet in the group and make changes that will appear on every worksheet in the group. If you click a worksheet tab that's not in the group, however, all of your worksheets will become ungrouped. You will have to group them again.

To ungroup all worksheets:

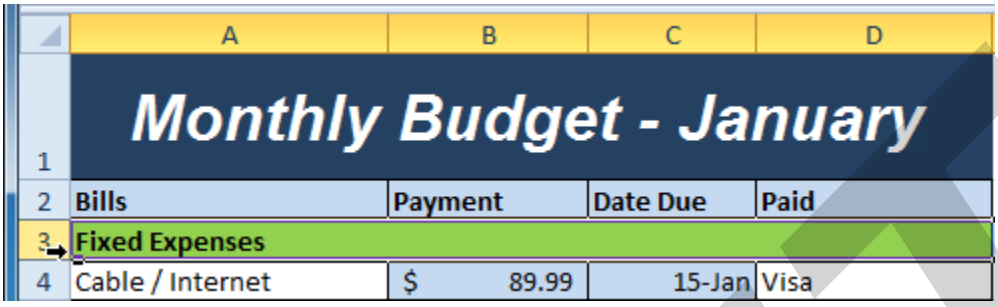
1. Right-click one of the worksheets. The **worksheet** menu appears.
2. Select **Ungroup**. The worksheets will be ungrouped.

Freezing worksheet panes

The ability to freeze specific rows or columns in your worksheet can be a useful feature in Excel. It is called **freezing panes**. When you freeze panes, you select rows or columns that will remain visible all the time, even as you are scrolling. This is particularly helpful when working with large spreadsheets.

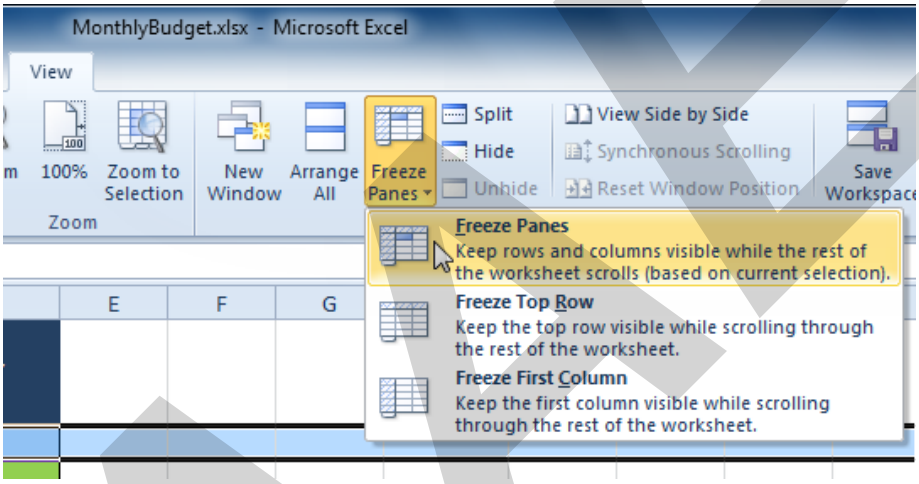
To freeze rows:

1. Select the row **below** the rows you want frozen. For example, if you want rows 1 and 2 to always appear at the top of the worksheet even as you scroll, then select row 3.

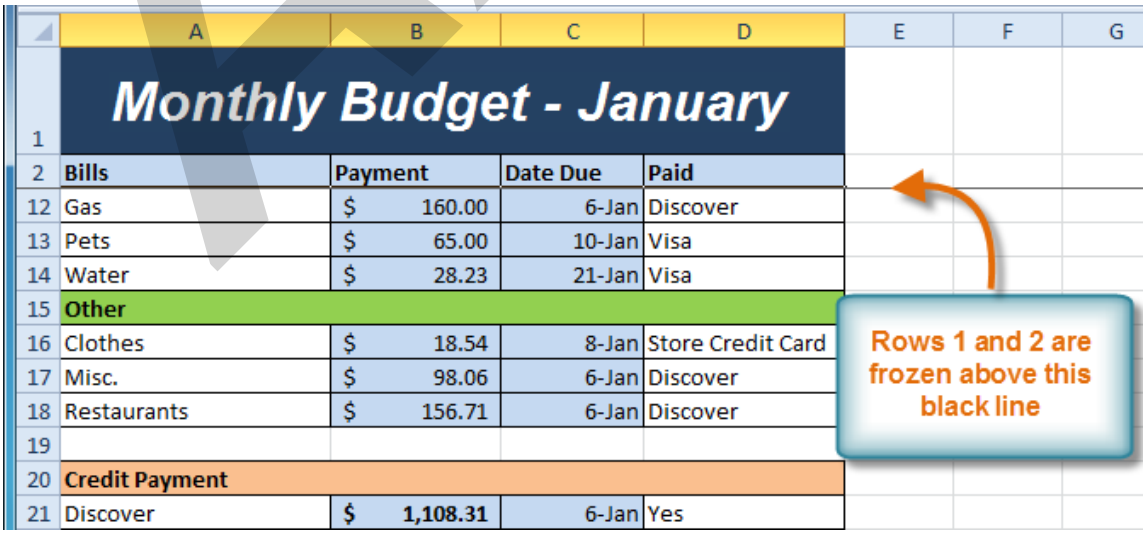


	A	B	C	D
1	Monthly Budget - January			
2	Bills	Payment	Date Due	Paid
3	Fixed Expenses			
4	Cable / Internet	$ 89.99	15-Jan	Visa

2. Click the **View** tab.
3. Click the **Freeze Panes** command. A drop-down menu appears.
4. Select **Freeze Panes**.



5. A black line appears **below** the rows that are frozen in place. Scroll down in the worksheet to see the rows below the frozen rows.



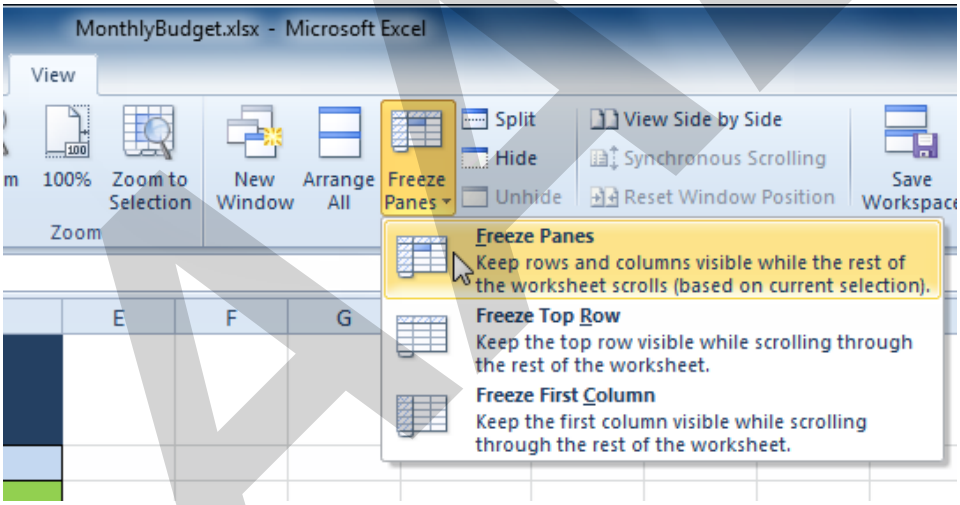
	A	B	C	D	E	F	G
1	Monthly Budget - January						
2	Bills	Payment	Date Due	Paid			
12	Gas	$ 160.00	6-Jan	Discover			
13	Pets	$ 65.00	10-Jan	Visa			
14	Water	$ 28.23	21-Jan	Visa			
15	Other						
16	Clothes	$ 18.54	8-Jan	Store Credit Card			
17	Misc.	$ 98.06	6-Jan	Discover			
18	Restaurants	$ 156.71	6-Jan	Discover			
19							
20	Credit Payment						
21	Discover	$ 1,108.31	6-Jan	Yes			

To freeze columns:

1. Select the column to the **right** of the columns you want frozen. For example, if you want columns A and B to always appear to the left of the worksheet even as you scroll, select column C.

	A	B	C	D	E	F
1						Va
2	Variable Expenses	January	February	March	April	May
3						
4	Cell Phone	$ 47.99	$ 53.62	$ 55.64	$ 52.31	$
5	Clothes	$ 55.24	$ 10.24	$ -	$ 157.44	$
6	Gas	$ 100.00	$ 120.49	$ 125.30	$ 153.00	$ 1
7	Groceries	$ 230.23	$ 203.50	$ 189.35	$ 125.00	$ 2
8	Home Phone	$ 30.50	$ 32.68	$ 31.67	$ 32.55	$
9	Power	$ 57.22	$ 68.65	$ 52.65	$ 55.98	$
10	Restaurants	$ 24.45	$ 78.24	$ 50.21	$ 60.24	$
11	Water	$ 44.88	$ 52.84	$ 50.36	$ 32.41	$
12	Total	$ 590.51	$ 620.26	$ 555.18	$ 668.93	$ 6
13	Total Year	$ 590.51	$ 1,210.77	$1,765.95	$ 2,434.88	$ 3,1

2. Click the **View** tab.
3. Click the **Freeze Panes** command. A drop-down menu appears.
4. Select **Freeze Panes**.



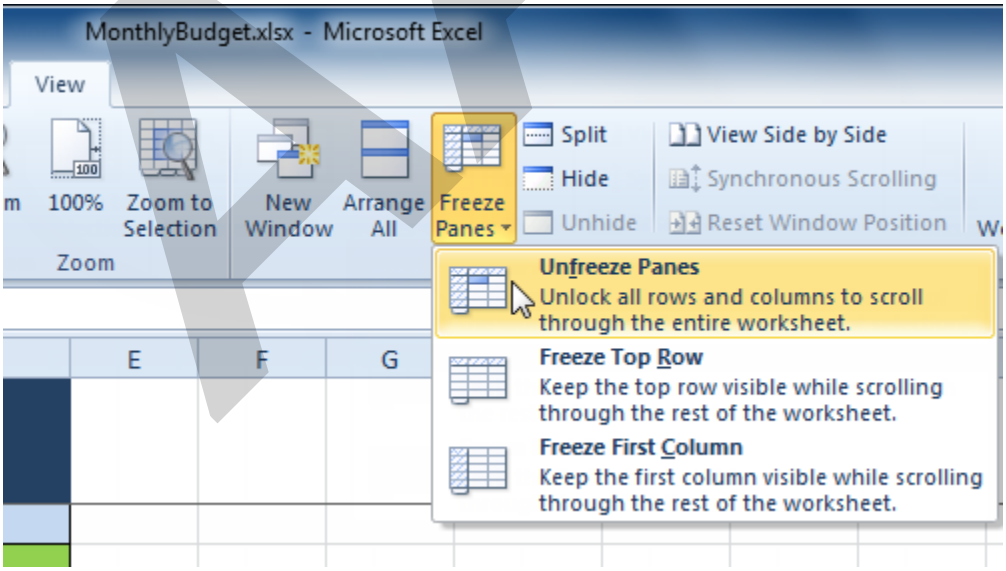
5. A black line appears to the **right** of the frozen area. Scroll across the worksheet to see the columns to the right of the frozen columns.

	A	B	F	G	H	I
1	Variable Expenses					
2	Variable Expenses	January	May	June	July	August
3						
4	Cell Phone	$ 47.99	$ 49.87	$ 47.86	$ 41.30	$ 49.40
5	Clothes	$ 55.24	$ 24.25	$ 46.42	$ -	$ 204.24
6	Gas	$ 100.00	$ 146.42	$ 107.77	$ 106.28	$ 113.12
7	Groceries	$ 230.23	$ 220.78	$ 208.45	$ 256.38	$ 245.12
8	Home Phone	$ 30.50	$ 39.87	$ 43.55	$ 55.60	$ 36.88
9	Power	$ 57.22	$ 68.21	$ 88.55	$ 87.42	$ 75.32
10	Restaurants	$ 24.45	$ 79.02	$ 45.45	$ 150.42	$ 46.02
11	Water	$ 44.88	$ 41.26	$ 31.43	$ 56.86	$ 48.55
12	**Total**	**$ 590.51**	**$ 669.68**	**$ 619.48**	**$ 754.26**	**$ 818.65**
13	Total Year	$ 590.51	$ 3,104.56	$ 3,724.04	$ 4,478.30	$ 5,296.95
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						

Columns A and B are frozen to the left of this black line

To unfreeze panes:

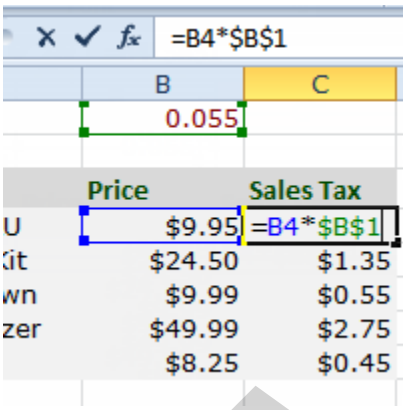
1. Click the **View** tab.
2. Click the **Freeze Panes** command. A drop-down menu appears.
3. Select **Unfreeze Panes**. The panes will be unfrozen, and the black line will disappear.



Challenge!

1. Open an **existing Excel 2010 workbook**. If you want, you can use this **example**.
2. **Insert** a new worksheet.
3. **Change the name** of a worksheet.
4. **Delete** a worksheet.
5. **Move** a worksheet.
6. **Copy** a worksheet.
7. Try **grouping and ungrouping** worksheets.
8. Try **freezing and unfreezing** columns and rows.

Creating complex formulas



Excel is a spreadsheet application that can help you calculate and analyze numerical information for household budgets, company finances, inventory, and more. To do this, you need to understand **complex formulas**.

In this lesson, you'll learn how to write complex formulas in Excel following the order of operations. You will also learn about **relative** and **absolute cell references**, as well as how to **copy** and **fill formulas** containing cell references.

Complex formulas

Simple formulas have one mathematical operation, such as **5+5**. **Complex formulas** have more than one mathematical operation, such as **5+5-2**. When there is more than one operation in a formula, the **order of operations** tells us which operation

to calculate first. To use Excel to calculate complex formulas, you'll need to understand the order of operations.

Optional: You can download this **example** for extra practice.

The order of operations

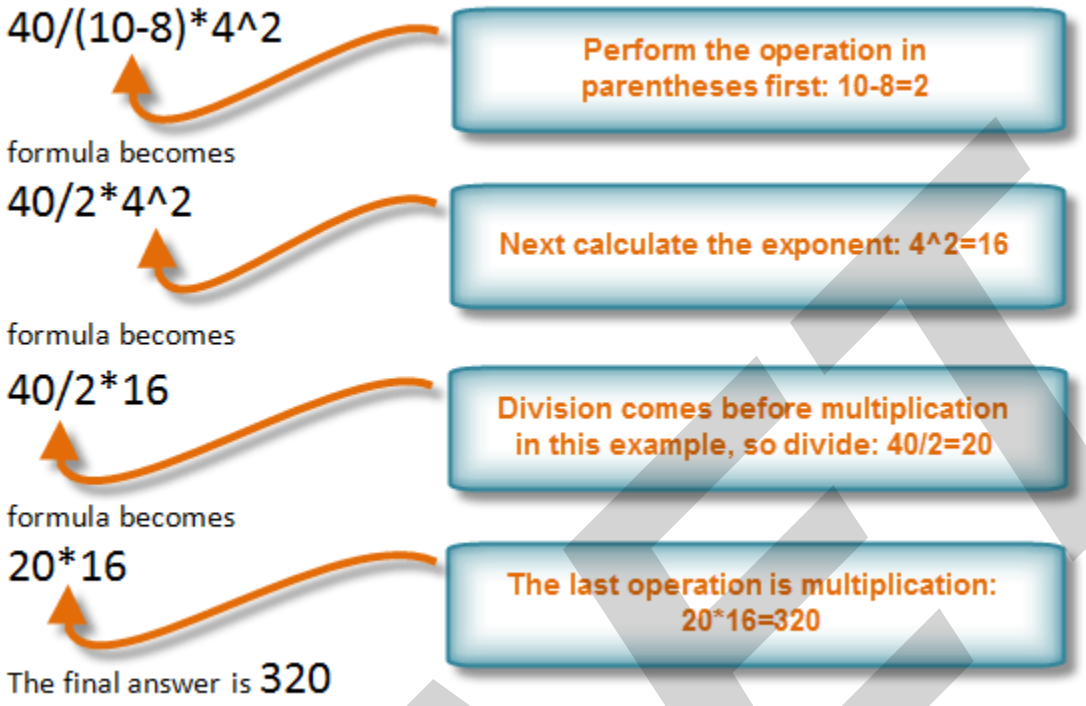
Excel calculates formulas based on the following **order of operations**:

1. Operations enclosed in **parentheses**
2. **Exponential** calculations (to the power of)
3. **Multiplication** and **division**, whichever comes first
4. **Addition** and **subtraction**, whichever comes first

A mnemonic that can help you remember the order is **P**lease **E**xcuse **M**y **D**ear **A**unt **S**ally.

Example 1

The following example demonstrates how to use the order of operations to calculate a formula:



Example 2

In this example, we'll review how Excel will calculate a complex formula using the order of operations. The selected cell will display the percent of total Pete Lily seeds sold that were white.

Seed Inventory	Packets Sold	Price	Percent of Total Sold
Pete Lily - Blue	14	$1.99	42.42
Pete Lily - White	19	$1.99	=(19*1.99)/(33*1.99)*100
Total Pete Lily	**33**	**$1.99**	

1. First, Excel will calculate the amount sold in parentheses: **(19*1.99)=37.81** White Pete Lily seeds and **(33*1.99)=65.67** Total Pete Lily seeds.
2. Second, it will divide the White Pete Lily seeds amount by the Total Pete Lily seeds amount: **37.81/65.67=.5758**.
3. Last, it will multiply the result by 100 to obtain the value as a percent: **.5758*100=57.58**.

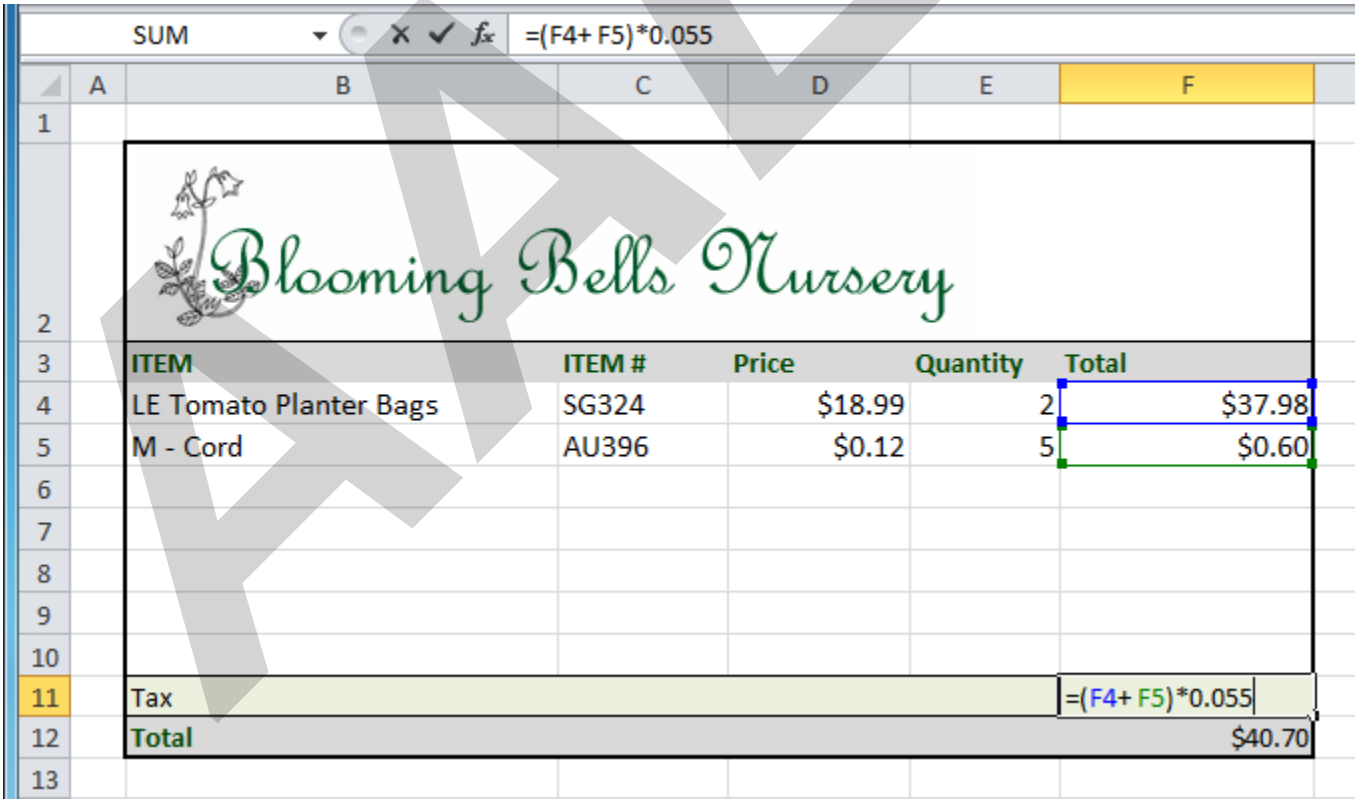
Based on this complex formula, the result will show that **57.58%** of the total Pete Lily seeds sold were white. You can see from this example that it is important to enter

complex formulas with the correct order of operations. Otherwise, Excel will not calculate the results accurately.

To create a complex formula using the order of operations:

In this example, we'll use **cell references** in addition to actual values to create a complex formula that will add tax to the nursery order.

1. Click the cell where you want the formula result to appear (**F11**, for example).
2. Type the **equals sign (=)**.
3. Type an **open parenthesis**, then click the cell that contains the first **value** you want in the formula (**F4**, for example).
4. Type the first **mathematical operator** (the addition sign, for example).
5. Click the cell that contains the second **value** you want in the formula (**F5,** for example), then type a **closed parenthesis**.
6. Type the next **mathematical operator** (the multiplication sign, for example).
7. Type the next **value** in the formula (**0.055** for **5.5% tax**, for example).



8. Click **Enter** to calculate your formula. The results show that $2.12 is the tax for the nursery order.

$2.12

Excel **will not always tell you** if your formula contains an error, so it's up to you to check all of your formulas. To learn how to do this, you can read the **Double-Check Your Formulas** lesson from our **Excel Formulas** tutorial.

Working with cell references

Video: Working with Cell References in Excel 2010

In order to maintain accurate formulas, it is necessary to understand how cell references respond when you copy or fill them to new cells in the worksheet.

Excel will interpret cell references as either **relative** or **absolute**. By default, cell references are **relative references**. When copied or filled, they change based on the relative position of rows and columns. If you copy a formula (=A1+B1) into row 2, the formula will change to become (=A2+B2).

Absolute references, on the other hand, do not change when they are copied or filled and are used when you want the values to stay the same.

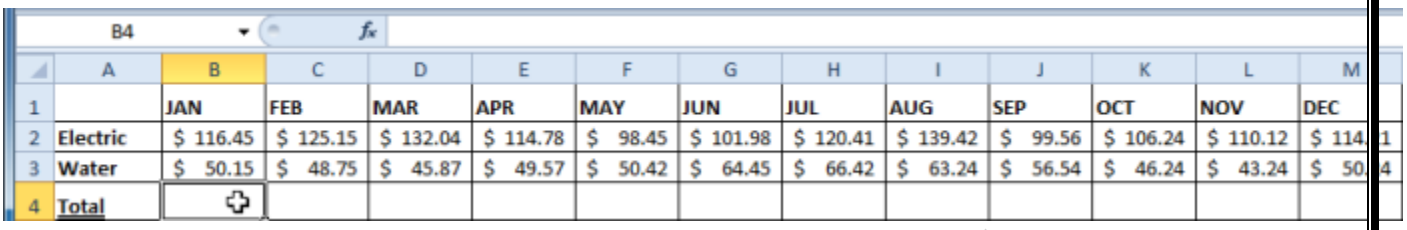
Relative references

Relative references can save you time when you're repeating the same type of calculation across multiple rows or columns.

In the following example, we're creating a formula with cell references in row 4 to calculate the total cost of the electric bill and water bill for each month (B4=B2+B3). For the upcoming months, we want to use the same formula with relative references (C2+C3, D2+D3, E2+E3, etc.). For convenience, we can copy the formula in B4 into the rest of row 4, and Excel will calculate the value of the bills for these months using relative references.

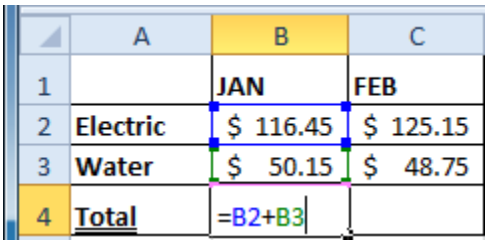
To create and copy a formula using relative references:

1. Select the first cell where you want to enter the formula (**B4**, for example).



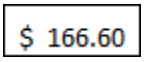
	A	B	C	D	E	F	G	H	I	J	K	L	M
1		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2	Electric	$ 116.45	$ 125.15	$ 132.04	$ 114.78	$ 98.45	$ 101.98	$ 120.41	$ 139.42	$ 99.56	$ 106.24	$ 110.12	$ 114.1
3	Water	$ 50.15	$ 48.75	$ 45.87	$ 49.57	$ 50.42	$ 64.45	$ 66.42	$ 63.24	$ 56.54	$ 46.24	$ 43.24	$ 50.4
4	Total												

2. Enter the formula to calculate the value you want (**B2+B3**, for example).



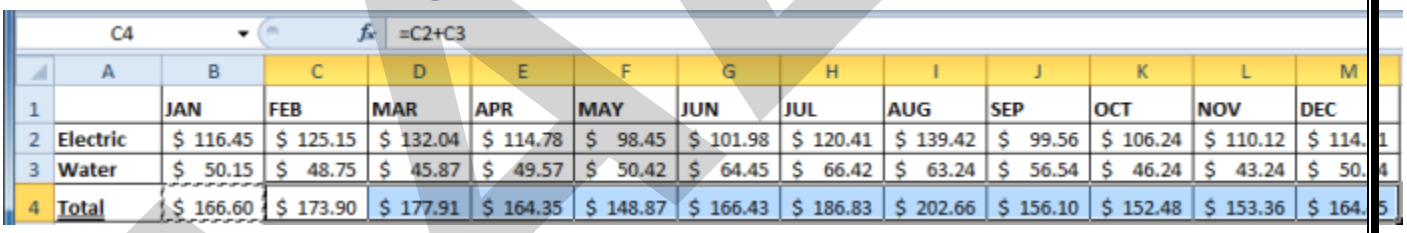
	A	B	C
1		JAN	FEB
2	Electric	$ 116.45	$ 125.15
3	Water	$ 50.15	$ 48.75
4	Total	=B2+B3	

3. Press **Enter**. The formula will be calculated.



$ 166.60

4. Select the cell you want to copy (**B4**, for example), then click the **Copy** command from the **Home** tab.
5. Select the cells where you want to paste the formula, then click the **Paste** command from the **Home** tab. You can also drag the fill handle to fill cells.



	A	B	C	D	E	F	G	H	I	J	K	L	M
1		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2	Electric	$ 116.45	$ 125.15	$ 132.04	$ 114.78	$ 98.45	$ 101.98	$ 120.41	$ 139.42	$ 99.56	$ 106.24	$ 110.12	$ 114.1
3	Water	$ 50.15	$ 48.75	$ 45.87	$ 49.57	$ 50.42	$ 64.45	$ 66.42	$ 63.24	$ 56.54	$ 46.24	$ 43.24	$ 50.4
4	Total	$ 166.60	$ 173.90	$ 177.91	$ 164.35	$ 148.87	$ 166.43	$ 186.83	$ 202.66	$ 156.10	$ 152.48	$ 153.36	$ 164.5

6. Your formula is copied to the selected cells as a relative reference (C4=C2+C3, D4=D2+D3, E4=E2+E3, etc.), and the values are calculated.

Absolute references

There may be times when you do not want a cell reference to change when copying or filling cells. You can use an **absolute reference** to keep a row and/or column constant in the formula.

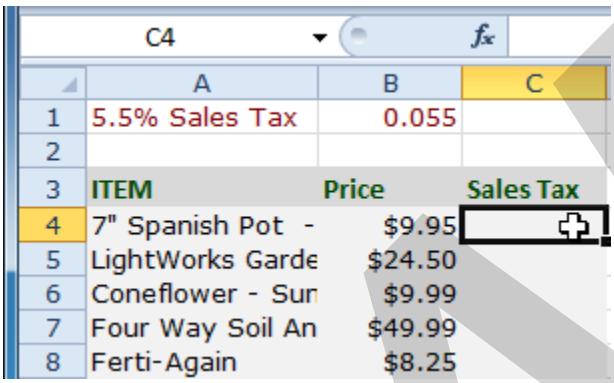
An absolute reference is designated in the formula by the addition of a **dollar sign ($)**. It can precede the column reference, the row reference, or both.

A2:	The column and the row do not change when copied.
A$2:	The row does not change when copied.
$A2:	The column does not change when copied.

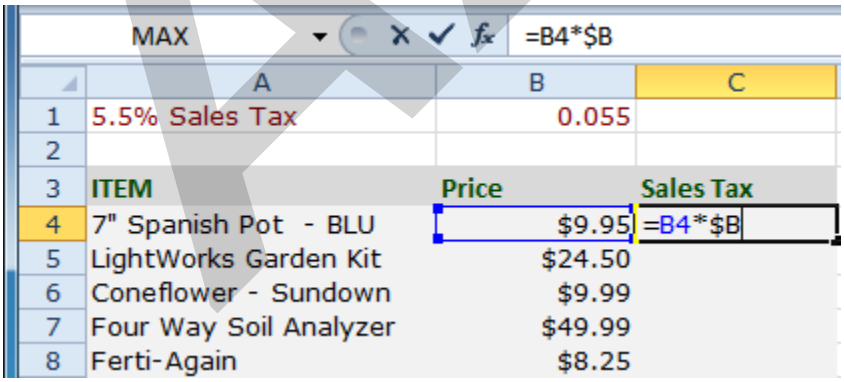
In the below example, we want to calculate the sales tax for a list of products with varying prices. We'll use an absolute reference for the sales tax (B1) because we do not want it to change as we are copying the formula down the column of varying prices.

To create and copy a formula using an absolute reference:

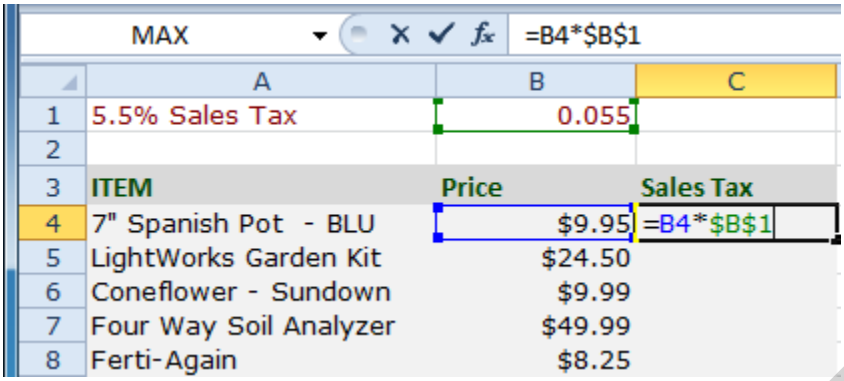
1. Select the first cell where you want to enter the formula (**C4**, for example).



2. Type an equals sign, and then click the cell that contains the first **value** you want in the formula (**B4**, for example).
3. Type the first **mathematical operator** (the multiplication sign, for example).
4. Type the **dollar sign ($)**, then enter the **column letter** of the cell you are making an absolute reference to (**B**, for example).



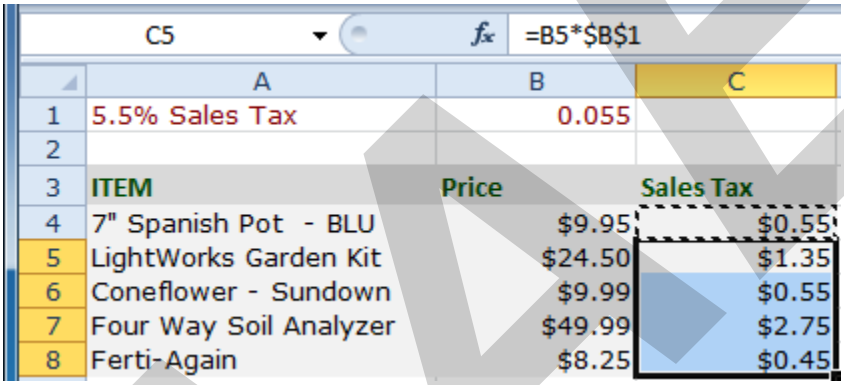
5. Type the **dollar sign ($)**, then enter the **row number** of the same cell you are making an absolute reference to (**1**, for example).



6. Press **Enter** to calculate the formula.

$0.55

7. Select the cell you want to copy (**C4**, for example), then click the **Copy** command from the **Home** tab.
8. Select the cells where you want to paste the formula, then click the **Paste** command from the **Home** tab. You can also drag the fill handle to fill cells.



9. Your formula is copied to the selected cells using the absolute reference (C5=B5*B1, C6=B6*B1, etc.), and your values are calculated.

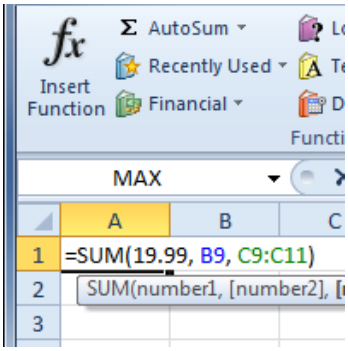
When writing a formula, you can press the **F4** key on your keyboard to switch between relative and absolute cell references. This is an easy way to quickly insert an absolute reference.

Challenge!

1. Open an **existing Excel 2010 workbook**. If you want, you can use this **example**.
2. Create a formula that uses an **absolute reference**. If you are using the example, calculate the sales tax in **E4:E20**. Use cell C23 as your absolute reference to the price of sales tax.
3. Create a formula that uses a **relative reference**. If you are using the example, create a formula that adds the price of each item in column D and the sales tax for each item in column E, then multiplies the result by the quantity of each item in column F. Enter your

results in the totals column (column G). **Hint:** You'll need to think about the order of operations for this to work correctly.

Working with basic functions



Figuring out formulas for calculations you want to make in Excel can be tedious and complicated. Fortunately, Excel has an entire library of **functions**—or **predefined formulas**—you can take advantage of. You may be familiar with common functions like **sum**, **average**, **product**, and **count**, but there are hundreds of functions in Excel, even for things like formatting text, referencing cells, calculating financial rates, and analyzing statistics.

In this lesson, you'll learn the basics of inserting common functions into your worksheet by utilizing the **AutoSum** and **Insert Functions** commands. You will also become familiar with how to **search** and **find various functions**, including exploring Excel's **Functions Library**.

Basic functions

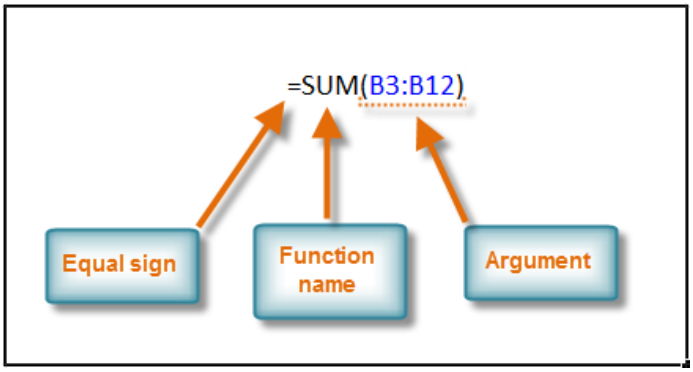
A **function** is a **predefined formula** that performs calculations using specific values in a particular order. One of the key benefits of functions is that they can save you time because you do not have to write the formula yourself. Excel has hundreds of functions to assist with your calculations.

To use these functions correctly, you need to understand the different **parts of a function** and how to create **arguments** in functions to calculate values and cell references.

You can download this **example** for extra practice.

The parts of a function

The order in which you insert a function is important. Each function has a specific order—called **syntax**—which must be followed in order for the function to work correctly. The basic syntax to create a formula with a function is to insert an **equals sign (=)**, **function name** (SUM, for example, is the function name for addition), and **argument**. Arguments contain the information you want the formula to calculate, such as a range of cell references.



Working with arguments

Arguments must be enclosed in **parentheses**. Individual values or cell references inside the parentheses are separated by either **colons** or **commas**.

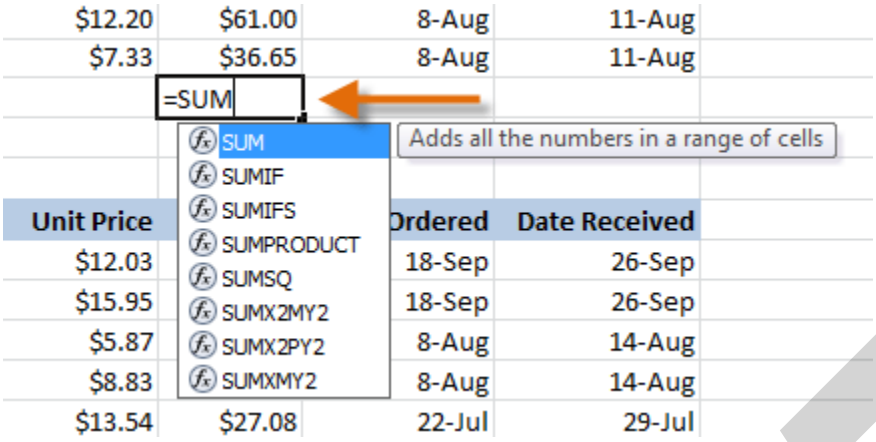
- **Colons** create a reference to a range of cells.

  For example, **=AVERAGE(E19:E23)** would calculate the **average** of the cell range E19 through E23.
- **Commas** separate individual values, cell references, and cell ranges in parentheses. If there is more than one argument, you must separate each argument by a comma.

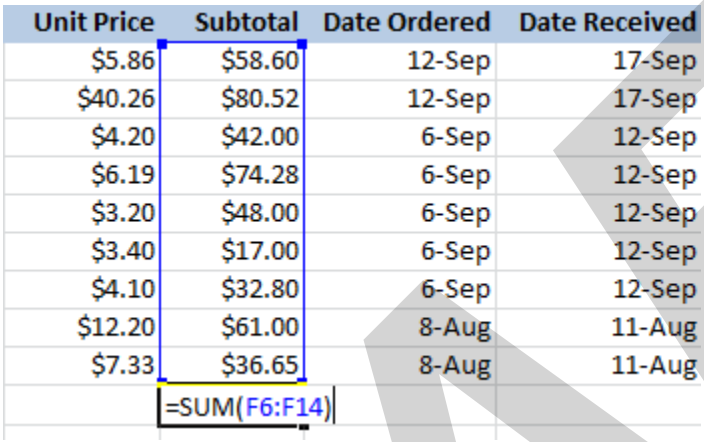
  For example, **=COUNT(C6:C14,C19:C23,C28)** will **count** all the cells in the three arguments that are included in parentheses.

To create a basic function in Excel:

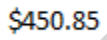
1. Select the cell where the answer will appear (**F15,** for example).
2. Type the **equals sign (=)**, then enter the **function name** (**SUM**, for example).



3. Enter the cells for the **argument** inside the parentheses.



4. Press **Enter**, and the result will appear.

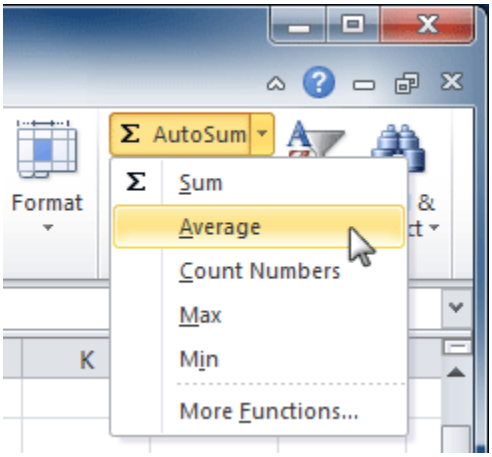


Excel **will not always tell you** if your function contains an error, so it's up to you to check all of your functions. To learn how to do this, read the **Double-Check Your Formulas** lesson from our **Excel Formulas** tutorial.

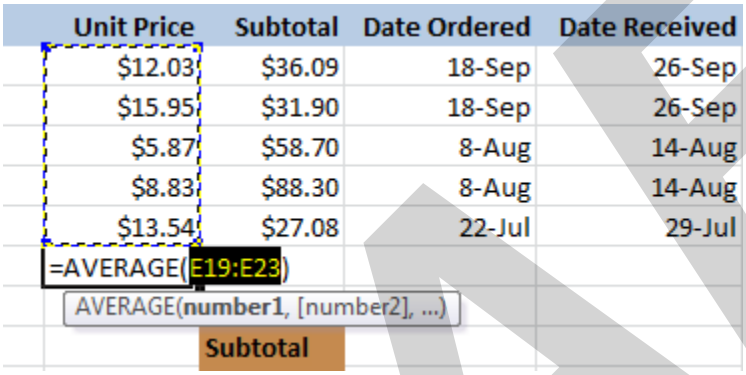
Using AutoSum to select common functions

The **AutoSum** command allows you to automatically return the results for a range of cells for common functions like SUM and AVERAGE.

1. Select the cell where the answer will appear (**E24**, for example).
2. Click the **Home** tab.
3. In the **Editing** group, click the **AutoSum** drop-down arrow and select the function you want (**Average**, for example).



4. A formula will appear in **E24**, the selected cell. If logically placed, AutoSum will select your cells for you. Otherwise, you will need to click the cells to choose the argument you want.



5. Press **Enter**, and the result will appear.

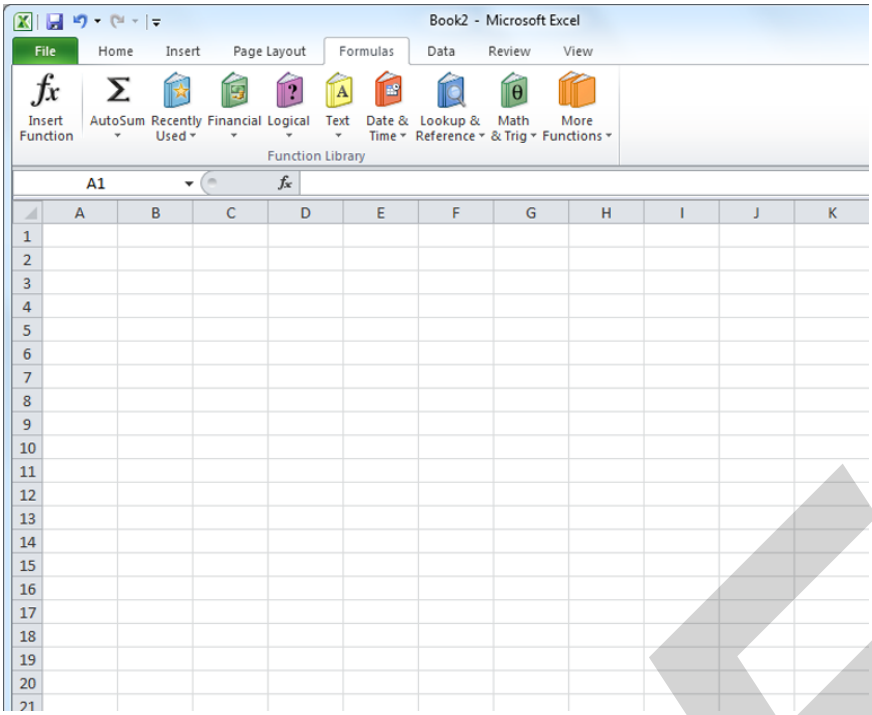
$11.24

The **AutoSum** command can also be accessed from the **Formulas** tab.

The Function Library

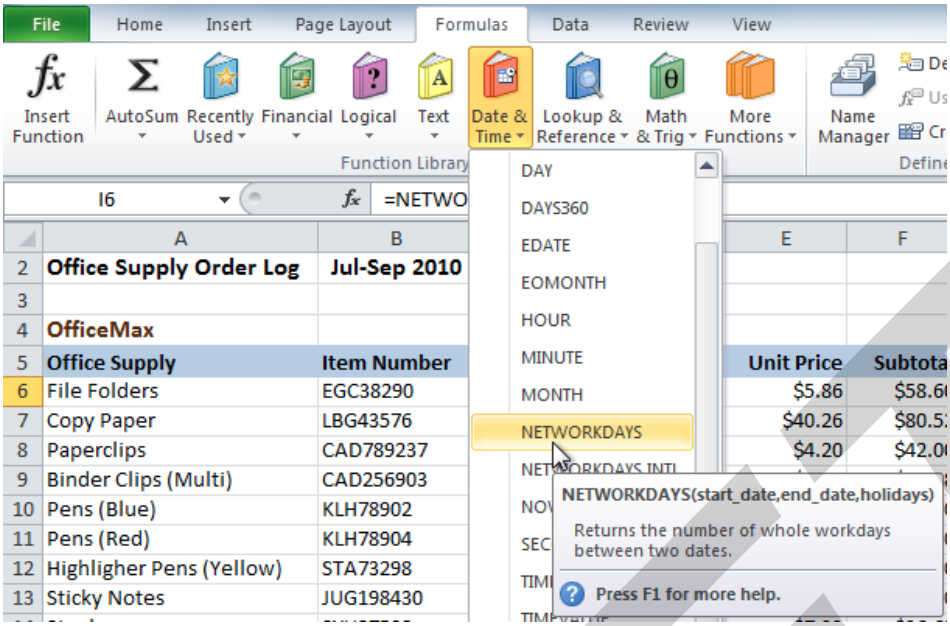
There are hundreds of functions in Excel, but only some will be useful for the type of data you're working with. There is no need to learn every single function, but you may want to explore some of the different types to get ideas about which ones might be helpful to you as you create new spreadsheets.

A great place to explore functions is in the **Function Library** on the Formulas tab. Here, you can search and select Excel functions based on categories such as **Financial**, **Logical**, **Text**, and **Date & Time**. Click the buttons in the interactive below to learn more.

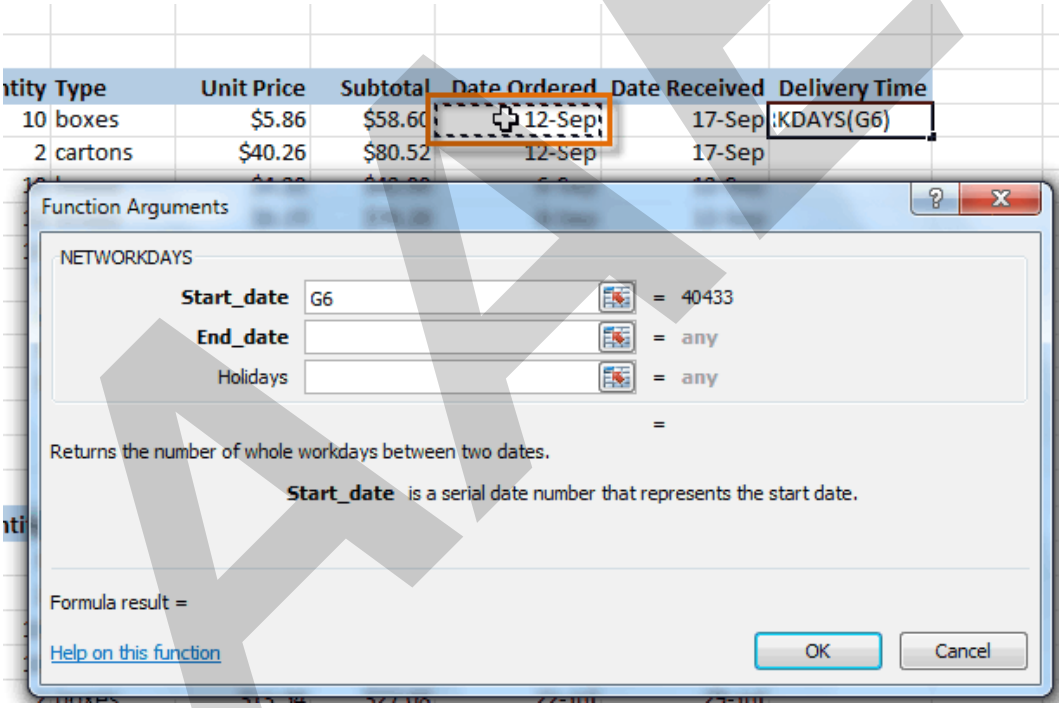


To insert a function from the Function Library:

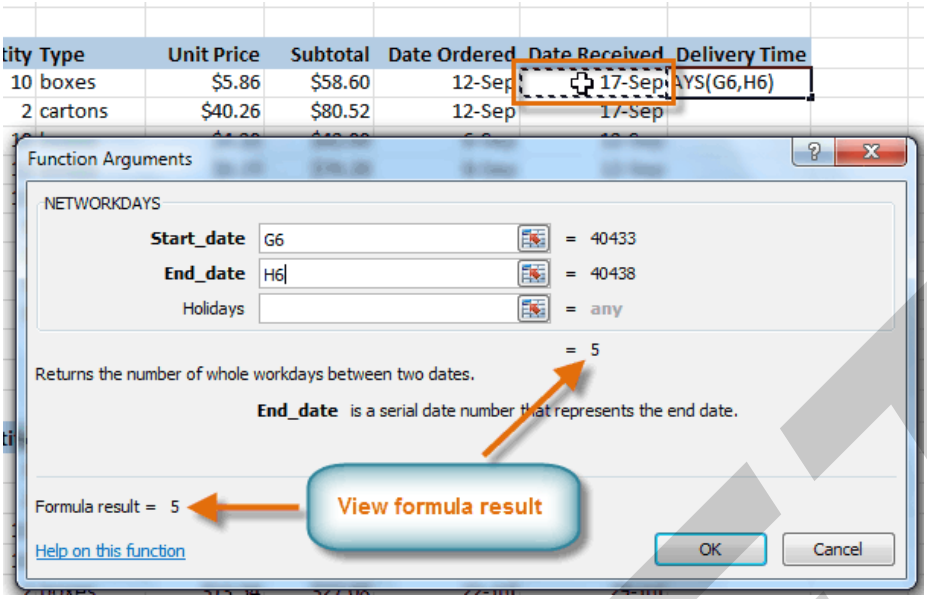
1. Select the cell where the answer will appear (**I6**, for example).
2. Click the **Formulas** tab.
3. From the **Function Library** group, select the **function category** you want. In this example, we'll choose **Date & Time**.
4. Select the desired **function** from the Date & Time drop-down menu. We'll choose the **NETWORKDAYS**function to count the days between the order date and receive date in our worksheet.



5. The **Function Arguments** dialog box will appear. Insert the cursor in the **first field**, then enter or select the cell(s) you want (**G6**, for example).



6. Insert the cursor in the **next field**, then enter or select the cell(s) you want (**H6**, for example).



7. Click **OK**, and the result will appear. Our results show that it took five days to receive the order.

Date Ordered	Date Received	
12-Sep	17-Sep	5

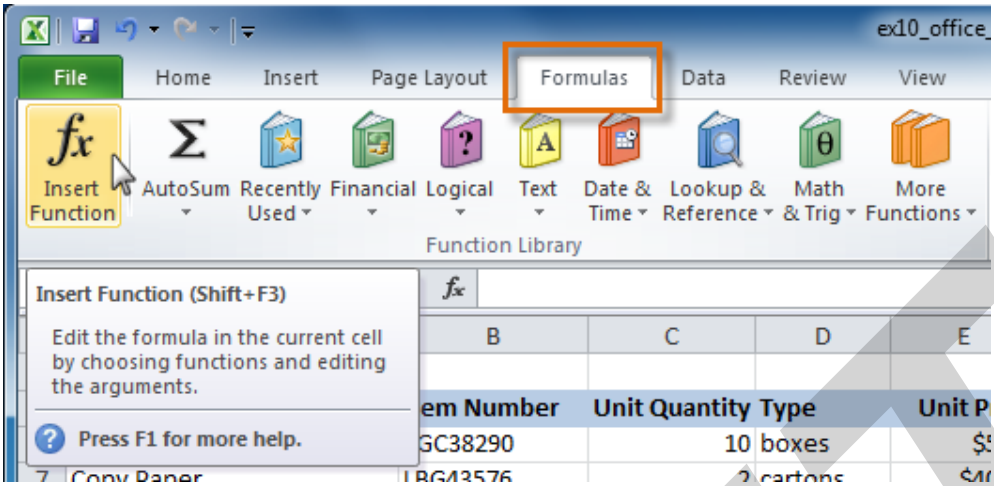
The Insert Function command

The **Insert Function** command is convenient because it allows you to search for a function by typing a description of what you're looking for or by selecting a category to peruse. The Insert Function command can also be used to easily enter or select more than one argument for a function.

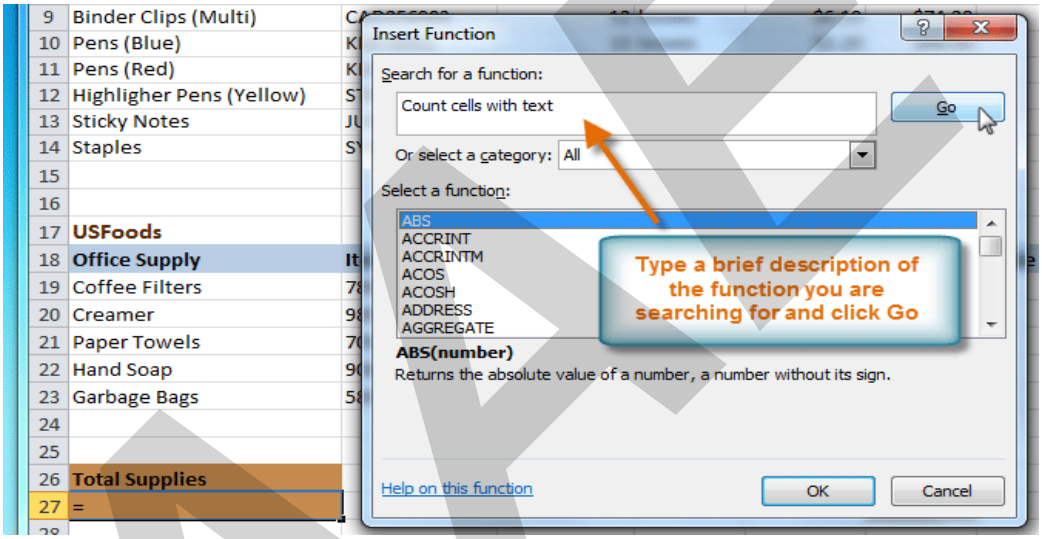
Using the Insert Function command

In this example, we want to find a function that will count the total number of supplies listed in the Office Supply Order Log. The basic COUNT function only counts cells with numbers; we want to count the cells in the Office Supply column, which uses text. Therefore, we'll need to find a formula that counts cells with text.

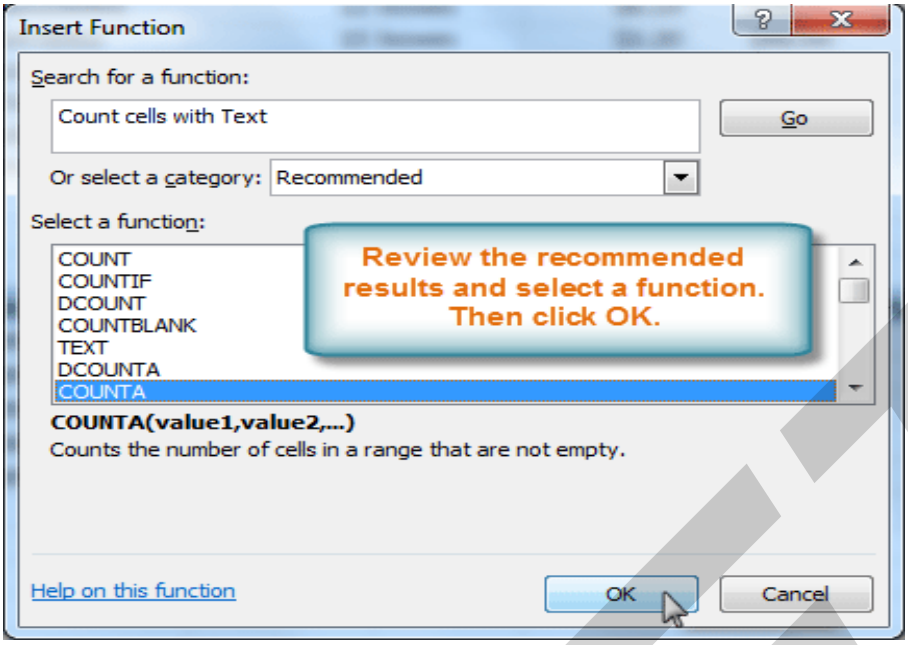
1. Select the cell where the answer will appear (**A27**, for example).
2. Click the **Formulas** tab, then select the **Insert Function** command.



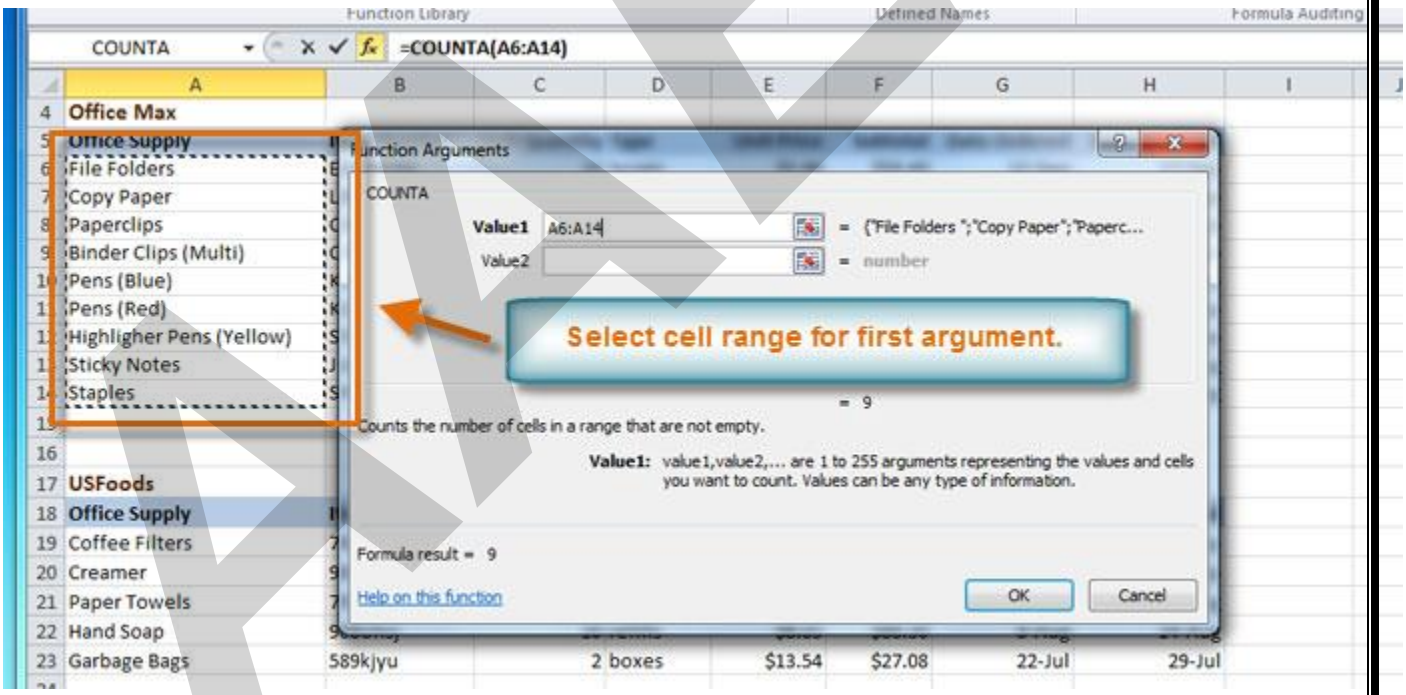
3. The **Insert Function** dialog box will appear.
4. Type a **description** of the function you are searching for, then click **Go (Count cells with text**, for example). You can also search by selecting a category.



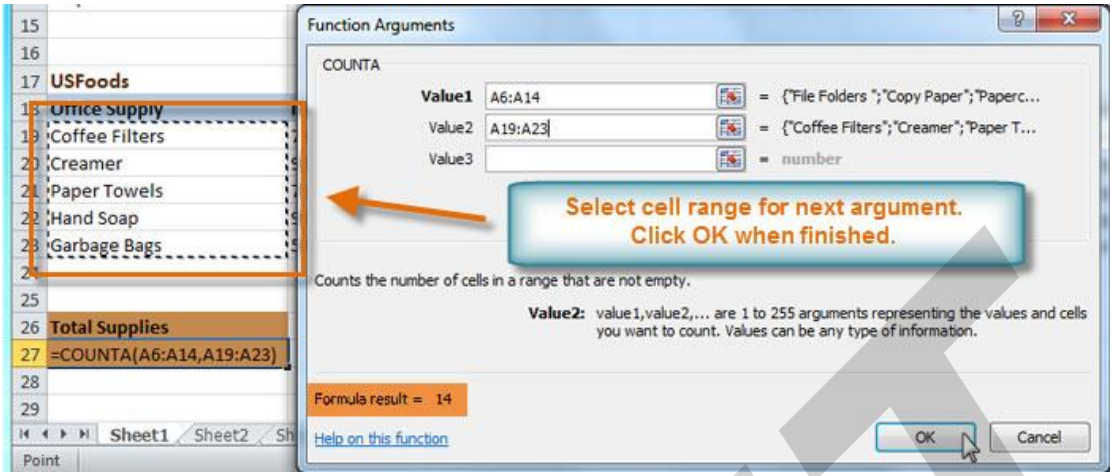
5. Review the results to find the function you want (**COUNTA**, for example). Click **OK**.



6. The **Function Arguments** dialog box will appear. Insert the cursor in the **first field**, then enter or select the cell(s) you want (**A6:A14**, for example).



7. Insert the cursor in the **next field**, then enter or select the cell(s) you want (**A19:A23**, for example). You can continue to add additional arguments if needed.



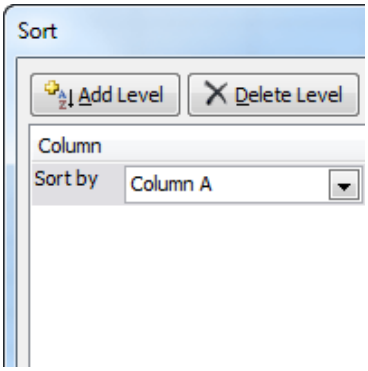
8. Click **OK**, and the result will appear. Our results show that 14 Total Supplies were ordered from our log.

If you're comfortable with basic functions, you may want to try a more advanced one like **VLOOKUP**. You can check out our article on **How to Use Excel's VLOOKUP Function** for more information. If you want to learn even more about functions, check out our **Excel Formulas** tutorial.

Challenge!

1. Open an **existing Excel 2010 workbook**. If you want, you can use this **example**.
2. Create a function that contains **more than one argument**.
3. Use **AutoSum** to insert a function. If you are using the example, insert the MAX function in cell E15 to find the highest-priced supply.
4. Insert a function from the **Functions Library**. If you are using the example, find the PRODUCT function (multiply) to calculate the Unit Quantity times the Unit Price in cells F19 through F23.
5. Use the **Insert Function** command to search and explore functions.

Introduction



With more than 17 billion cells in a single worksheet, Excel 2010 gives you the ability to work with an **enormous amount of data**. Arranging your data alphabetically, from smallest to largest, or using other criteria can help you find the information you're looking for more quickly.

In this lesson, you will learn how to **sort** data to better view and organize the contents of your spreadsheet.

Basic sorting

Sorting is a common task that allows you to change or customize the order of your spreadsheet data. For example, you could organize an office birthday list by employee, birthdate, or department, making it easier to find what you're looking for. Custom sorting takes it a step further, giving you the ability to sort multiple levels—such as department first, then birthdate—to group birthdates by department.

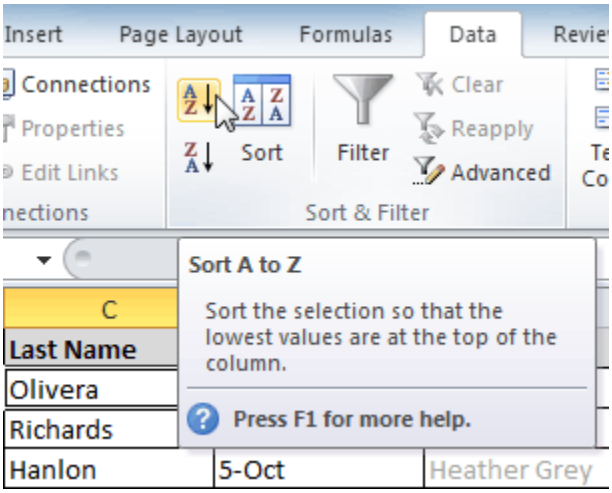
Optional: You can download this **example** for extra practice.

To sort in alphabetical order:

1. Select a cell in the column you want to sort by. In this example, we'll sort by **Last Name**.

	C	D	E
1	**Last Name**	**Payment**	**T-Shirt Color**
2	Olivera	1-Oct	White
3	Richards	4-Oct	Dark Red
4	Hanlon	5-Oct	Heather Grey
5	Means	5-Oct	Dark Red

2. Select the **Data** tab, then locate the **Sort and Filter** group.
3. Click the ascending command to **Sort A to Z** or the descending command to **Sort Z to A**.



4. The data in the spreadsheet will be organized alphabetically.

	C	D	E
1	**Last Name**	**Payment**	**T-Shirt Color**
2	Ackerman	1-Oct	Heather Grey
3	Albee	13-Oct	Heather Grey
4	Bell	11-Oct	Dark Red
5	Benson	11-Oct	White
6	Chen	5-Oct	Dark Red
7	Del Toro	13-Oct	White
8	Ellison	Pending	Dark Red
9	Flores	6-Oct	White
10	Hanlon	5-Oct	Heather Grey
11	Kelly	11-Oct	Dark Red
12	Kelly	11-Oct	Heather Grey
13	Lazar	14-Oct	White
14	MacDonald	Pending	Dark Red
15	Means	5-Oct	Dark Red
16	Naser	14-Oct	Dark Red
17	Nichols	6-Oct	Dark Red

Sorting options can also be found on the Home tab, condensed into the **Sort & Filter** command.

To sort in numerical order:

1. Select a cell in the column you want to sort by.

	A	B	C
1	**Homeroom #**	**First Name**	**Last Name**
2	110	Kris	Ackerman
3	105	Nathan	Albee
4	220-B	Samantha	Bell
5	110	Matt	Benson

2. From the **Data** tab, click the ascending command to **Sort Smallest to Largest** or the descending command to **Sort Largest to Smallest**.
3. The data in the spreadsheet will be organized numerically.

	A	B	C
1	**Homeroom #**	**First Name**	**Last Name**
2	105	Nathan	Albee
3	105	Christiana	Chen
4	105	Sidney	Kelly
5	105	Derek	MacDonald
6	105	Melissa	White
7	105	Esther	Yaron
8	110	Kris	Ackerman
9	110	Matt	Benson
10	110	Gabriel	Del Toro
11	110	Regina	Olivera
12	135	Anisa	Naser
13	135	James	Panarello
14	135	Lia	Richards
15	135	Jordan	Weller
16	135	Chantal	Weller
17	135	Alex	Yuen

To sort by date or time:

1. Select a cell in the column you want to sort by.

	D	E	F
1	**Payment**	**T-Shirt Color**	**T-Shirt Size**
2	13-Oct	Heather Grey	Medium
3	5-Oct	Dark Red	Medium
4	11-Oct	Dark Red	Medium
5	Pending	Dark Red	Large

2. From the **Data** tab, click the ascending command to **Sort Oldest to Newest** or the descending command to **Sort Newest to Oldest**.
3. The data in the spreadsheet will be organized by date or time.

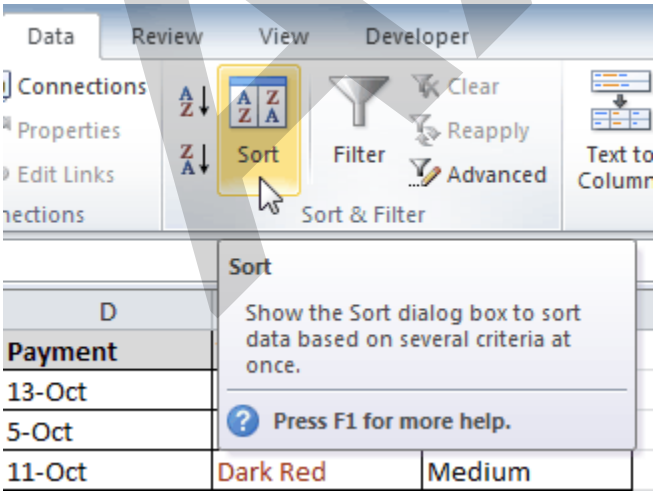
	D	E	F
1	**Payment**	**T-Shirt Color**	**T-Shirt Size**
2	1-Oct	Heather Grey	Large
3	1-Oct	White	Large
4	4-Oct	Dark Red	X-Large
5	5-Oct	Dark Red	Medium
6	5-Oct	Heather Grey	Large
7	5-Oct	Dark Red	Medium
8	5-Oct	Heather Grey	X-Large
9	6-Oct	White	X-Large
10	6-Oct	Dark Red	X-Large
11	7-Oct	Heather Grey	Small
12	7-Oct	Dark Red	Small
13	7-Oct	Heather Grey	Small
14	7-Oct	Heather Grey	Small
15	11-Oct	Dark Red	Medium
16	11-Oct	White	Medium
17	11-Oct	Dark Red	Medium

Custom sorting

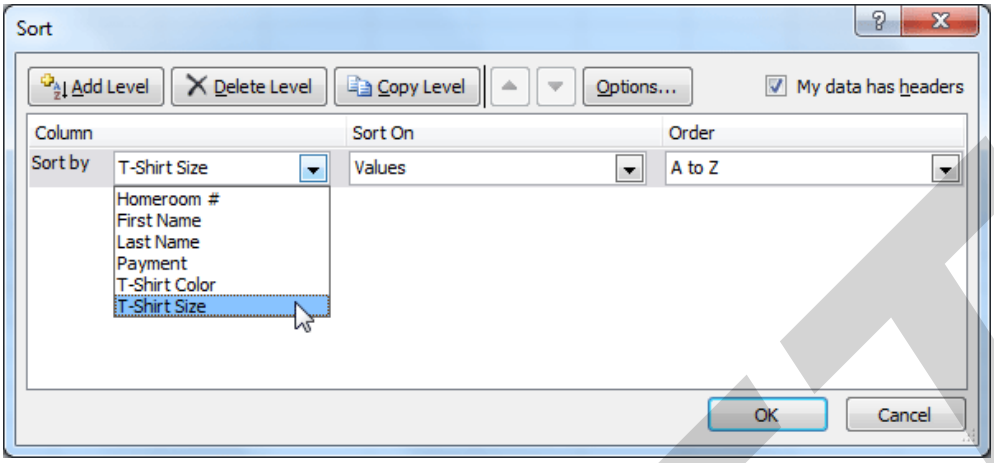
To sort in the order of your choosing:

You can use a **Custom List** to identify your own sorting order, such as days of the week—or in this example, T-shirt sizes from smallest to largest.

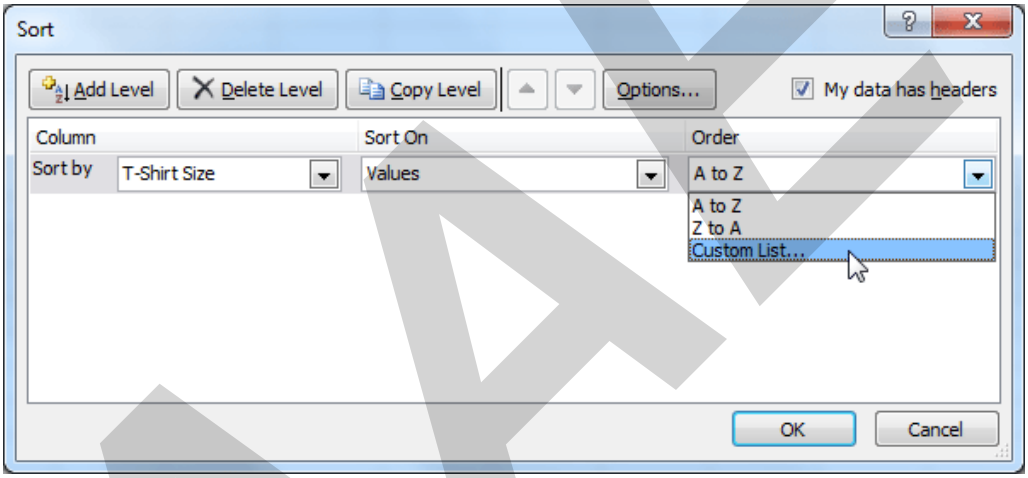
1. From the **Data** tab, click the **Sort** command to open the **Sort** dialog box.



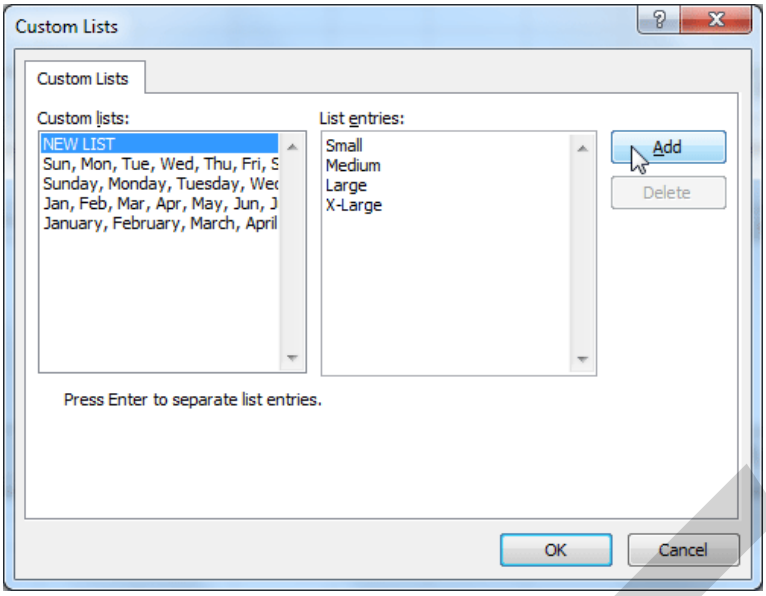
2. Identify the column you want to **Sort by** by clicking the drop-down arrow in the **Column** field. In this example, we'll choose T-Shirt Size.



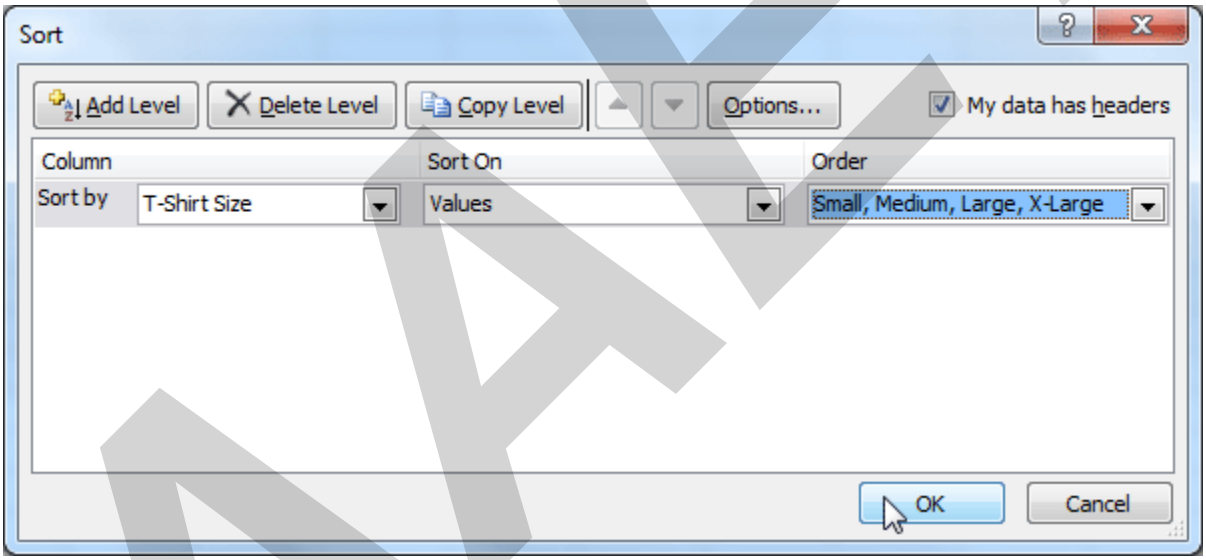
3. Make sure **Values** is selected in the **Sort On** field.
4. Click the drop-down arrow in the **Order** field, then choose **Custom List**.



5. Select **NEW LIST**, and enter how you want your data sorted in the **List entries** box. We'll sort T-shirt sizes from smallest to largest.
6. Click **Add** to save the list, then click **OK**.



7. Click **OK** to close the Sort dialog box and sort your data.

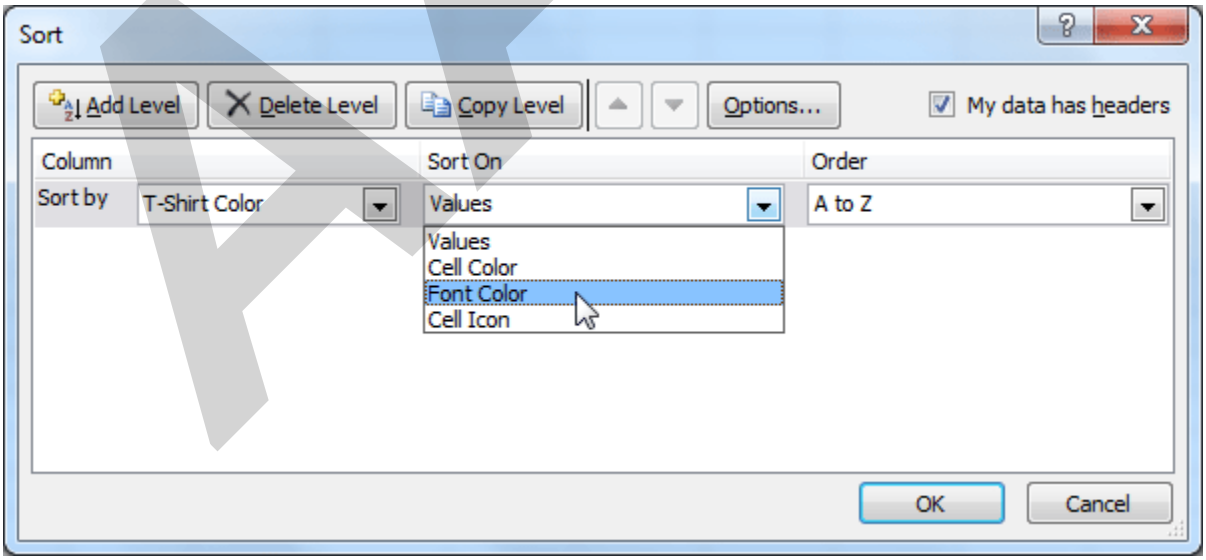


8. The spreadsheet will be sorted in order of Small, Medium, Large, and X-Large.

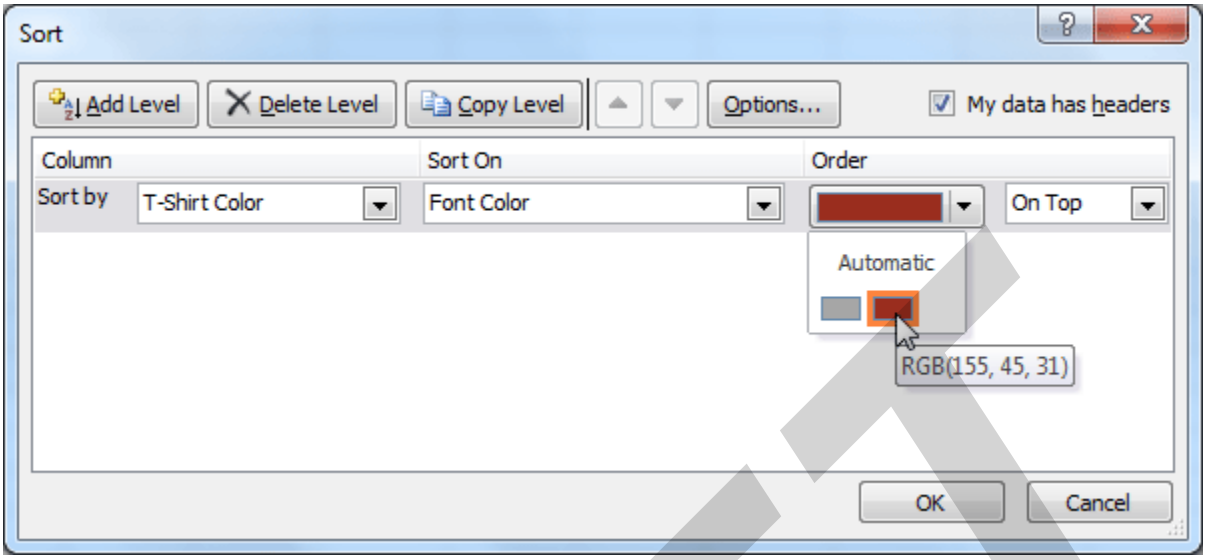
	C	D	E	F
1	Last Name	Payment	T-Shirt Color	T-Shirt Size
6	Naser	14-Oct	Dark Red	Small
7	Lazar	14-Oct	White	Small
8	Ellison	Pending	Dark Red	Small
9	Peyton-Gomez	Pending	White	Small
10	Chen	5-Oct	Dark Red	Medium
11	Means	5-Oct	Dark Red	Medium
12	Benson	11-Oct	White	Medium
13	Bell	11-Oct	Dark Red	Medium
14	Albee	13-Oct	Heather Grey	Medium
15	Del Toro	13-Oct	White	Medium
16	Panarello	15-Oct	White	Medium
17	Ackerman	1-Oct	Heather Grey	Large
18	Olivera	1-Oct	White	Large
19	Weller	5-Oct	Heather Grey	Large
20	Yuen	4-0ct	White	Large
21	MacDonald	Pending	Dark Red	Large
22	Richards	4-Oct	Dark Red	X-Large
23	Hanlon	5-Oct	Heather Grey	X-Large

To sort by cell color, font color, or cell icon:

1. From the **Data** tab, click the **Sort** command to open the **Sort** dialog box.
2. Identify the column you want to **Sort by** by clicking the drop-down arrow in the **Column** field.
3. Choose whether you want to sort by Cell Color, Font Color, or Cell Icon in the **Sort On** field. In this example, we'll sort by **Font Color**.



4. In the **Order** field, click the drop-down arrow to choose a color, then decide whether you want it ordered **On Top** or **On Bottom**.



5. Click **OK**. The data is now sorted by attribute rather than text.

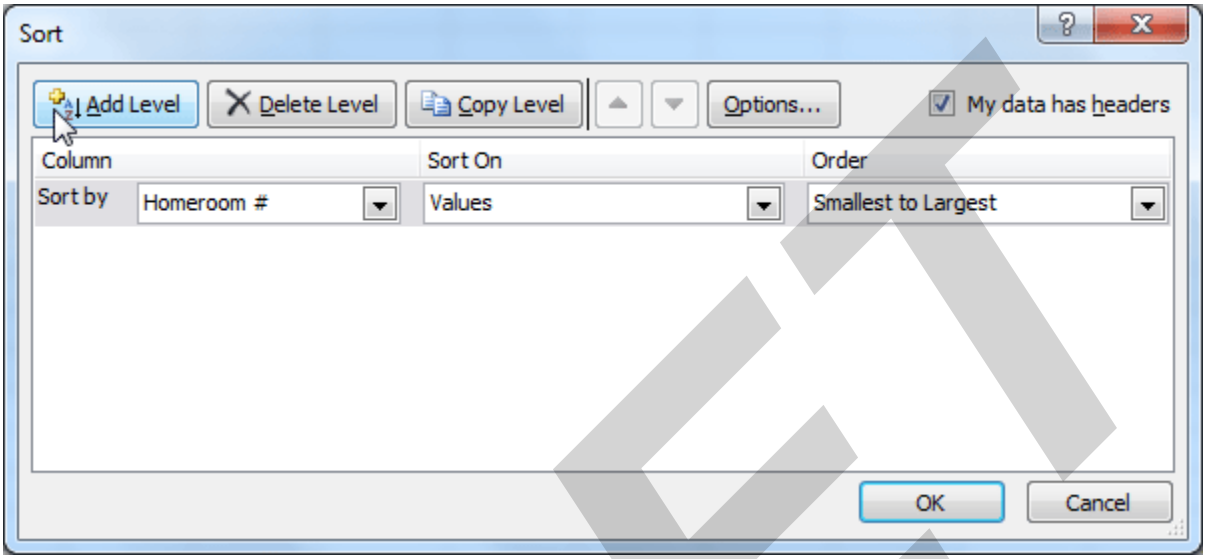
	C	D	E
1	**Last Name**	**Payment**	**T-Shirt Color**
2	Richards	4-Oct	Dark Red
3	Means	5-Oct	Dark Red
4	Chen	5-Oct	Dark Red
5	Nichols	6-Oct	Dark Red
6	Yaron	7-Oct	Dark Red
7	Bell	11-Oct	Dark Red
8	Kelly	11-Oct	Dark Red
9	Naser	14-Oct	Dark Red
10	Ellison	Pending	Dark Red
11	MacDonald	Pending	Dark Red
12	Ackerman	1-Oct	Heather Grey
13	Olivera	1-Oct	White

Sorting multiple levels

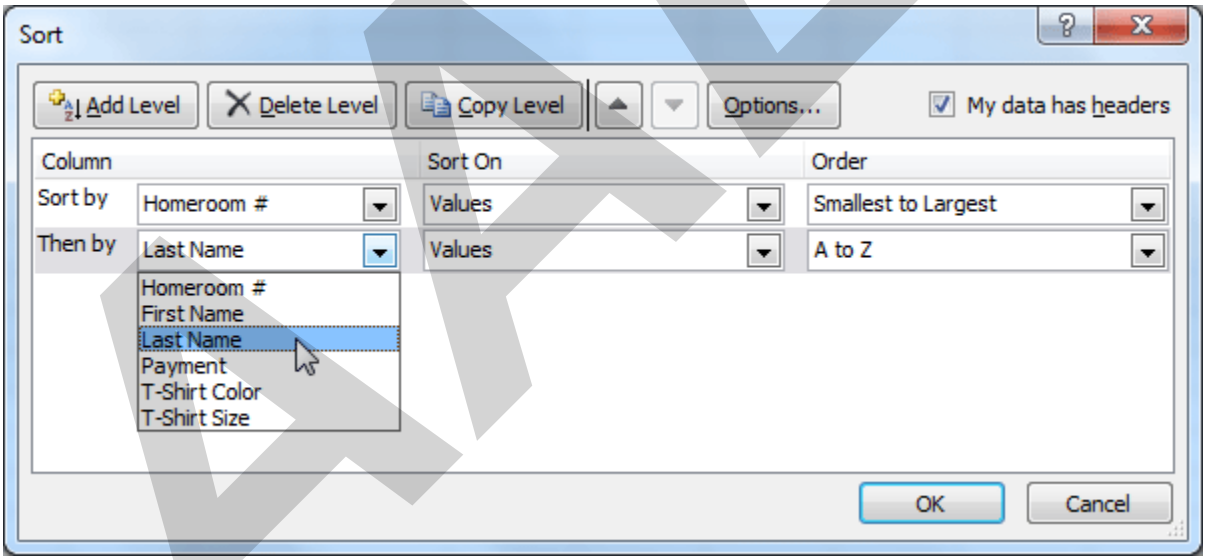
Another feature of custom sorting—**sorting multiple levels**—allows you to identify which columns to sort by and when, giving you more control over the organization of your data. For example, you could sort by more than one cell color—such as red, then yellow, then green, to indicate different levels of priority—or, as seen below, you could sort students by homeroom number, then by last name.

To add a level:

1. From the **Data** tab, click the **Sort** command to open the **Sort** dialog box.
2. Identify the first item you want to **Sort by**. In this example, we will sort Homeroom # from **Smallest to Largest**.
3. Click **Add Level** to add another item.



4. Identify the item you want to sort by next. We will sort **Last Name** from **A to Z**.



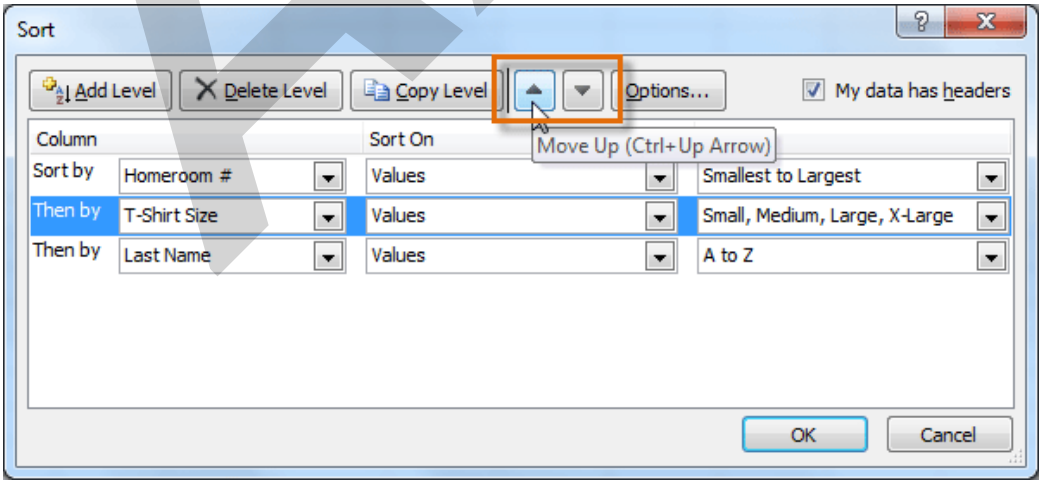
5. Click **OK**.
6. The spreadsheet will be sorted so homeroom numbers are in order, and within each homeroom, that students are listed alphabetically by last name.

	A	B	C
1	**Homeroom #**	**First Name**	**Last Name**
2	105	Nathan	Albee
3	105	Christiana	Chen
4	105	Sidney	Kelly
5	105	Derek	MacDonald
6	105	Melissa	White
7	105	Esther	Yaron
8	110	Kris	Ackerman
9	110	Matt	Benson
10	110	Gabriel	Del Toro
11	110	Regina	Olivera
12	135	Anisa	Naser
13	135	James	Panarello
14	135	Lia	Richards
15	135	Jordan	Weller
16	135	Chantal	Weller
17	135	Alex	Yuen

Copy Level will add a level by duplicating the one you have selected and allowing you to modify the sorting criteria. This is useful if you need to sort multiple levels that share some criteria, such as the same Column, Sort On, or Order.

To change the sorting priority:

1. From the **Data** tab, click the **Sort** command to open the **Custom Sort** dialog box.
2. Select the **level** you want to reorder.
3. Use the **Move Up** or **Move Down** arrows. The higher the level is on the list, the higher its priority.

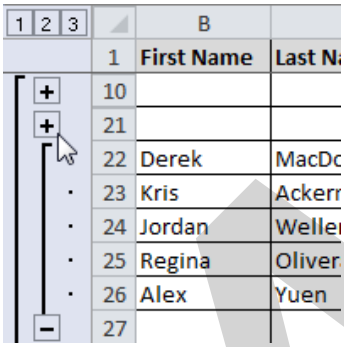


4. Click **OK**.

Challenge!

1. Open an **existing Excel 2010 workbook**. If you want, you can use this **example**.
2. Sort a column in **ascending** or **descending** order. If you are using the example, sort by Homeroom #.
3. Add a **second level**, and sort it according to cell color, font color, or cell icon. If you are using the example, add a second and third level to sort by the red and grey fonts used in T-Shirt Color.
4. Add **another level**, and sort it using a Custom List. If you are using the example, sort by T-Shirt Size in the order of Small, Medium, Large, and X-Large.
5. Change the **sorting priority**. If you are using the example, reorder the list to sort by T-Shirt Color (red), then by T-Shirt Color (grey), then by T-Shirt Size, then by Homeroom #.

Introduction



If the amount of data in your worksheet becomes overwhelming, creating an outline can help. Not only does this allow you to organize your data into groups and then show or hide them from view, but it also allows you to summarize data for quick analysis using the Subtotal command (for example, subtotaling the cost of office supplies depending on the type of product).

In this lesson, you will learn how to **outline** your worksheet in order to summarize and control how your data is displayed.

Outlining data

Outlines give you the ability to group data you may want to show or hide from view, as well as to create a quick summary using the Subtotal command. Because outlines rely on grouping data that is related, you **must sort before you can outline**. For more information, you may want to review our lesson on **Sorting Data**.
Optional: You can download this **example** for extra practice.

Outlining data using Subtotal

The **Subtotal** command can be used to outline your worksheet in several ways. It uses common functions like SUM, COUNT, and AVERAGE to **summarize** your data and place it in a **group**. To learn more about functions, visit our **Working with Basic Functions** lesson.
In this example, we'll use the Subtotal command to count the number of T-shirt sizes that were ordered at a local high school. This will also place each T-shirt size in a group, making it possible to show the count but hide the details that are not crucial to placing the order (such as a student's homeroom number and payment date).

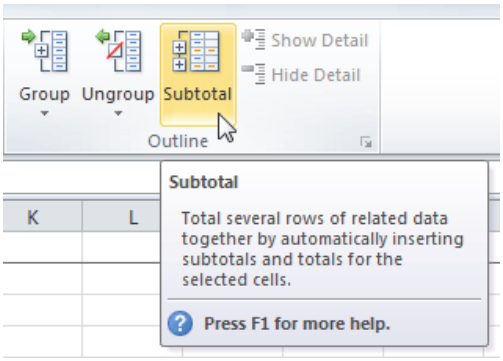
To outline data using Subtotal:

1. **Sort** according to the data you want to outline. Outlines rely on grouping data that is related. In this example, we will outline the worksheet by T-Shirt Size, which has been sorted from smallest to largest.

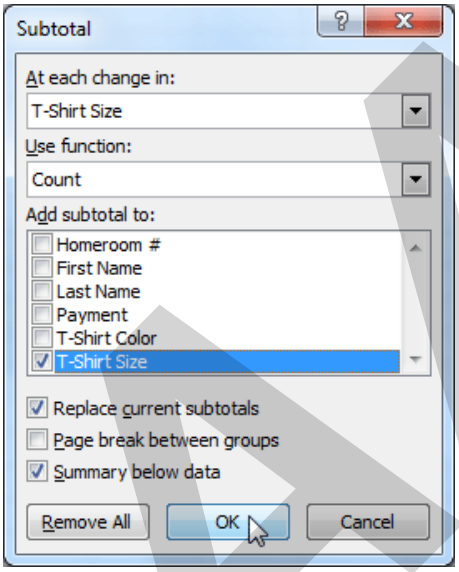
	C	D	E	F
1	**Last Name**	**Payment**	**T-Shirt Color**	**T-Shirt Size**
4	Ellison	Pending	Dark Red	Small
5	White	7-Oct	Heather Grey	Small
6	Reynolds	7-Oct	Heather Grey	Small
7	Shaw	7-Oct	Heather Grey	Small
8	Peyton-Gomez	Pending	White	Small
9	Lazar	14-Oct	White	Small
10	Chen	5-Oct	Dark Red	Medium
11	Kelly	11-Oct	Dark Red	Medium
12	Means	5-Oct	Dark Red	Medium
13	Bell	11-Oct	Dark Red	Medium
14	Albee	13-Oct	Heather Grey	Medium
15	Kelly	11-Oct	Heather Grey	Medium
16	Benson	11-Oct	White	Medium
17	Del Toro	13-Oct	White	Medium
18	Panarello	15-Oct	White	Medium
19	Weller	15-Oct	White	Medium
20	MacDonald	Pending	Dark Red	Large
21	Ackerman	1-Oct	Heather Grey	Large
22	Weller	5-Oct	Heather Grey	Large
23	Olivera	1-Oct	White	Large
24	Yuen	5-Oct	White	Large
25	Richards	4-Oct	Dark Red	X-Large

2. Select the **Data** tab, then locate the **Outline** group.

3. Click the **Subtotal** command to open the Subtotal dialog box.



4. In the **At each change in** field, select the column you want to use to outline your worksheet. In this example, we'll choose T-Shirt Size.
5. In the **Use function** field, choose from the list of functions that are available for subtotaling. We'll use the COUNT function to tally the number of each size.
6. Select the **column** you want the subtotal to appear in. We'll choose the T-Shirt Size column.
7. Click **OK**.



8. The contents of your worksheet will be outlined. Each T-shirt size will be placed in its own group, and the subtotal (count, in this case) will be listed below each group.

	C	D	E	F
1	**Last Name**	**Payment**	**T-Shirt Color**	**T-Shirt Size**
2	Yaron	7-Oct	Dark Red	Small
3	Naser	14-Oct	Dark Red	Small
4	Ellison	Pending	Dark Red	Small
5	White	7-Oct	Heather Grey	Small
6	Reynolds	7-Oct	Heather Grey	Small
7	Shaw	7-Oct	Heather Grey	Small
8	Peyton-Gomez	Pending	White	Small
9	Lazar	14-Oct	White	Small
10			**Small Count**	8
11	Chen	5-Oct	Dark Red	Medium
12	Kelly	11-Oct	Dark Red	Medium
13	Means	5-Oct	Dark Red	Medium
14	Bell	11-Oct	Dark Red	Medium
15	Albee	13-Oct	Heather Grey	Medium
16	Kelly	11-Oct	Heather Grey	Medium
17	Benson	11-Oct	White	Medium
18	Del Toro	13-Oct	White	Medium
19	Panarello	15-Oct	White	Medium
20	Weller	15-Oct	White	Medium
21			**Medium Count**	10

Showing and hiding data

To show or hide a group:

1. Click the minus sign—also known as the **Hide Detail** symbol—to collapse the group.

	C	D	E	F
1	**Last Name**	**Payment**	**T-Shirt Color**	**T-Shirt Size**
8	Peyton-Gomez	Pending	White	Small
9	Lazar	14-Oct	White	Small
10			**Small Count**	8
11	Chen	5-Oct	Dark Red	Medium
12	Kelly	11-Oct	Dark Red	Medium
13	Means	5-Oct	Dark Red	Medium
14	Bell	11-Oct	Dark Red	Medium
15	Albee	13-Oct	Heather Grey	Medium
16	Kelly	11-Oct	Heather Grey	Medium
17	Benson	11-Oct	White	Medium
18	Del Toro	13-Oct	White	Medium
19	Panarello	15-Oct	White	Medium
20	Weller	15-Oct	White	Medium
21			**Medium Count**	10
22	MacDonald	Pending	Dark Red	Large
23	Ackerman	1-Oct	Heather Grey	Large
24	Weller	5-Oct	Heather Grey	Large
25	Olivera	1-Oct	White	Large
26	Yuen	5-Oct	White	Large
27			**Large Count**	5

2. Click the plus sign—also known as the **Show Detail** symbol—to expand the group again.

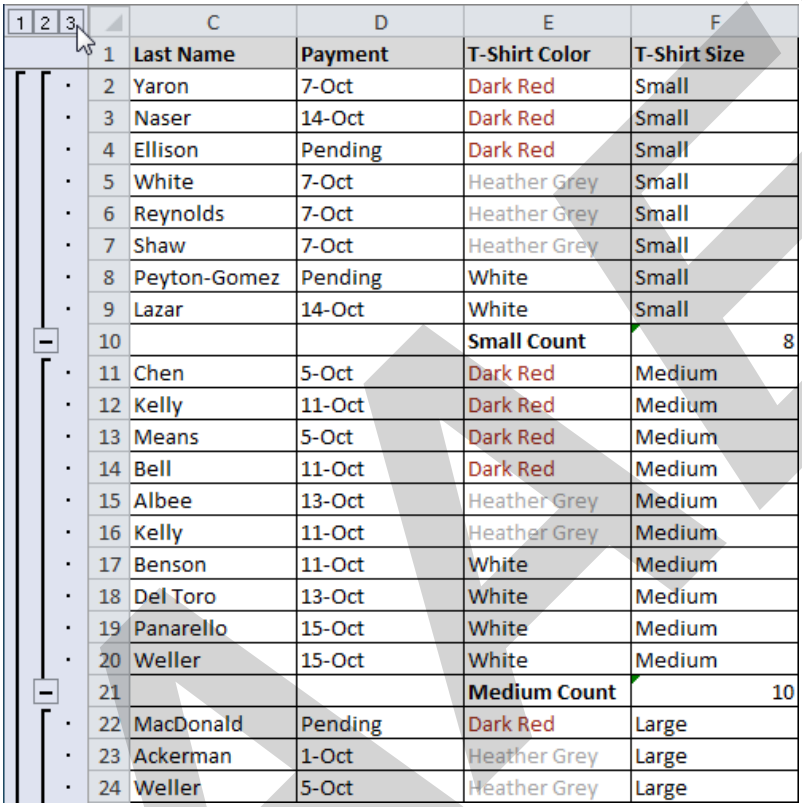
	C	D	E	F
1	**Last Name**	**Payment**	**T-Shirt Color**	**T-Shirt Size**
8	Peyton-Gomez	Pending	White	Small
9	Lazar	14-Oct	White	Small
10			**Small Count**	8
21			**Medium Count**	10
22	MacDonald	Pending	Dark Red	Large
23	Ackerman	1-Oct	Heather Grey	Large
24	Weller	5-Oct	Heather Grey	Large
25	Olivera	1-Oct	White	Large
26	Yuen	5-Oct	White	Large
27			**Large Count**	5
28	Richards	4-Oct	Dark Red	X-Large
29	Nichols	6-Oct	Dark Red	X-Large
30	Hanlon	4-Oct	Heather Grey	X-Large
31	Flores	6-Oct	White	X-Large
32			**X-Large Count**	4
33			**Grand Count**	27

You can also use the Show Detail or Hide Detail commands on the **Data** tab in the Outline group. Select a cell in the group you want to show or hide, then click the appropriate command.

To view groups by level:

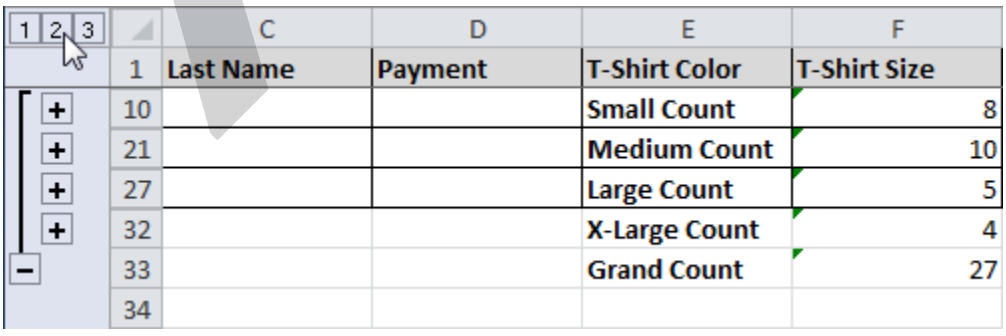
The groups in your outline, based on their hierarchy, are placed on different levels. You can quickly display as little or as much information as you want by clicking the level symbols 1 2 3 to the left of your worksheet. In this example, we will view levels in descending order, starting with the entire worksheet on display, then finishing with the grand total. While this example contains only three levels, Excel can accommodate up to eight.

1. Click the **highest level** (level **3** in this example) to view and expand all of your groups. Viewing groups at the highest level will display the entirety of your worksheet.



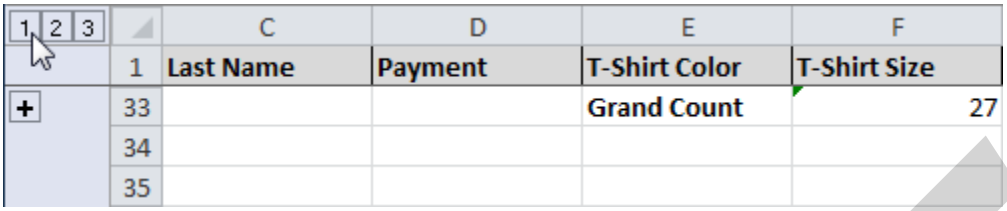
	C	D	E	F
1	**Last Name**	**Payment**	**T-Shirt Color**	**T-Shirt Size**
2	Yaron	7-Oct	Dark Red	Small
3	Naser	14-Oct	Dark Red	Small
4	Ellison	Pending	Dark Red	Small
5	White	7-Oct	Heather Grey	Small
6	Reynolds	7-Oct	Heather Grey	Small
7	Shaw	7-Oct	Heather Grey	Small
8	Peyton-Gomez	Pending	White	Small
9	Lazar	14-Oct	White	Small
10			**Small Count**	8
11	Chen	5-Oct	Dark Red	Medium
12	Kelly	11-Oct	Dark Red	Medium
13	Means	5-Oct	Dark Red	Medium
14	Bell	11-Oct	Dark Red	Medium
15	Albee	13-Oct	Heather Grey	Medium
16	Kelly	11-Oct	Heather Grey	Medium
17	Benson	11-Oct	White	Medium
18	Del Toro	13-Oct	White	Medium
19	Panarello	15-Oct	White	Medium
20	Weller	15-Oct	White	Medium
21			**Medium Count**	10
22	MacDonald	Pending	Dark Red	Large
23	Ackerman	1-Oct	Heather Grey	Large
24	Weller	5-Oct	Heather Grey	Large

2. Click the **next level** (level **2** in this example) to hide the detail of the previous level. In this example, level 2 contains each subtotal.



	C	D	E	F
1	**Last Name**	**Payment**	**T-Shirt Color**	**T-Shirt Size**
10			**Small Count**	8
21			**Medium Count**	10
27			**Large Count**	5
32			**X-Large Count**	4
33			**Grand Count**	27
34				

3. Click the **lowest level** (level **1** in this example) to display the lowest level of detail. In this example, level 1 contains only the grand total.



	C	D	E	F
1	Last Name	Payment	T-Shirt Color	T-Shirt Size
33			Grand Count	27
34				
35				

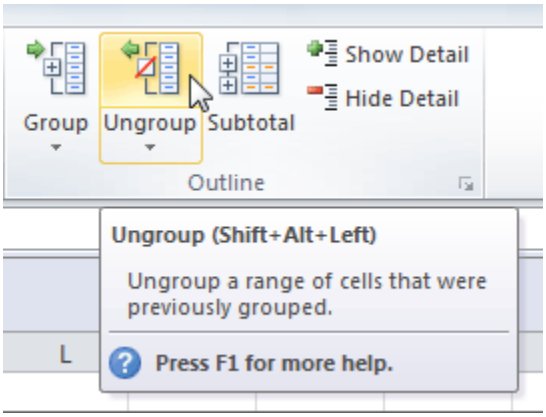
Removing groups and subtotaling

To ungroup data:

1. Select the rows or columns you want to ungroup. In this example, we'll ungroup size Small.

	C	D	E	F
1	Last Name	Payment	T-Shirt Color	T-Shirt Size
2	Yaron	7-Oct	Dark Red	Small
3	Naser	14-Oct	Dark Red	Small
4	Ellison	Pending	Dark Red	Small
5	White	7-Oct	Heather Grey	Small
6	Reynolds	7-Oct	Heather Grey	Small
7	Shaw	7-Oct	Heather Grey	Small
8	Peyton-Gomez	Pending	White	Small
9	Lazar	14-Oct	White	Small
10			Small Count	8
11	Chen	5-Oct	Dark Red	Medium
12	Kelly	11-Oct	Dark Red	Medium
13	Means	5-Oct	Dark Red	Medium
14	Bell	11-Oct	Dark Red	Medium
15	Albee	13-Oct	Heather Grey	Medium
16	Kelly	11-Oct	Heather Grey	Medium
17	Benson	11-Oct	White	Medium

2. From the **Data** tab, click the **Ungroup** command. The range of cells will be ungrouped.

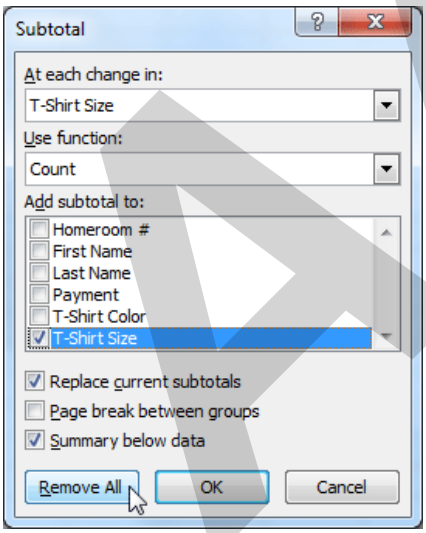


To ungroup all of the groups in your outline, open the drop-down menu under the **Ungroup** command, then choose **Clear Outline**.

Ungroup and **Clear Outline** will not remove subtotaling from your worksheet. Summary or subtotal data will stay in place and continue to function until you remove it.

To ungroup data and remove subtotaling:

1. From the **Data** tab, click the **Subtotal** command to open the Subtotal dialog box.
2. Click **Remove All**.



3. All data will be ungrouped, and subtotals will be removed.

	C	D	E	F
1	Last Name	Payment	T-Shirt Color	T-Shirt Size
4	Ellison	Pending	Dark Red	Small
5	White	7-Oct	Heather Grey	Small
6	Reynolds	7-Oct	Heather Grey	Small
7	Shaw	7-Oct	Heather Grey	Small
8	Peyton-Gomez	Pending	White	Small
9	Lazar	14-Oct	White	Small
10	Chen	5-Oct	Dark Red	Medium
11	Kelly	11-Oct	Dark Red	Medium
12	Means	5-Oct	Dark Red	Medium
13	Bell	11-Oct	Dark Red	Medium
14	Albee	13-Oct	Heather Grey	Medium
15	Kelly	11-Oct	Heather Grey	Medium
16	Benson	11-Oct	White	Medium
17	Del Toro	13-Oct	White	Medium
18	Panarello	15-Oct	White	Medium
19	Weller	15-Oct	White	Medium
20	MacDonald	Pending	Dark Red	Large
21	Ackerman	1-Oct	Heather Grey	Large
22	Weller	5-Oct	Heather Grey	Large
23	Olivera	1-Oct	White	Large
24	Yuen	5-Oct	White	Large
25	Richards	4-Oct	Dark Red	X-Large

Creating your own groups

The **Group** command allows you to group any range of cells—either columns or rows. It does not calculate a subtotal or rely on your data being sorted. This gives you the ability to show or hide any part of your worksheet and display only the information you need.

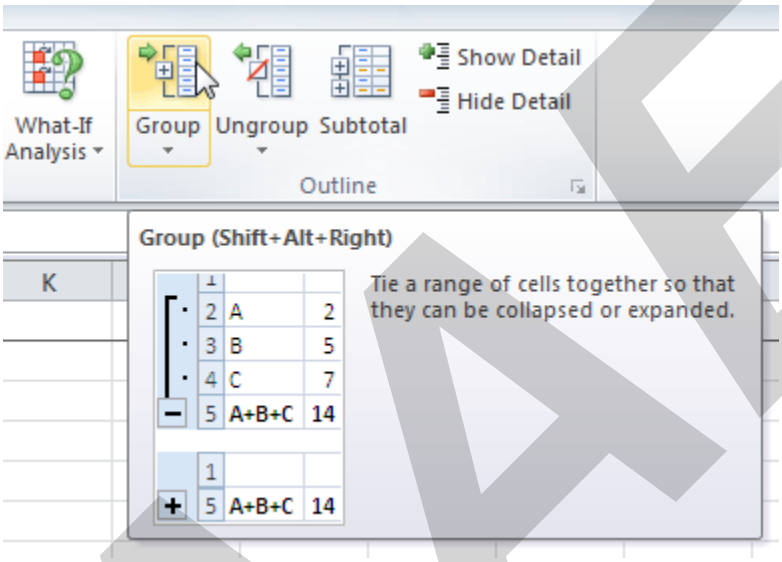
To create and control your own group:

In this example, we will prepare a list of T-shirt colors and sizes that need to be distributed to each homeroom. Some of the data in the worksheet is not relevant to the distribution of T-shirts; however, instead of deleting it, we'll group it, then temporarily hide it from view.

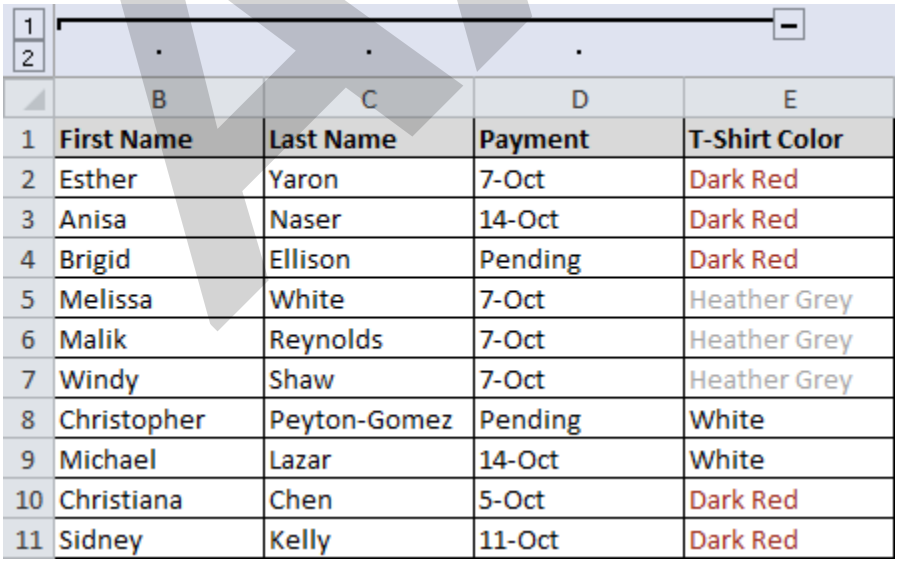
1. Select the range of cells you want to group. In this example, we will group the First Name, Last Name, and Payment columns.

	B	C	D	E
1	First Name	Last Name	Payment	T-Shirt Color
2	Esther	Yaron	7-Oct	Dark Red
3	Anisa	Naser	14-Oct	Dark Red
4	Brigid	Ellison	Pending	Dark Red
5	Melissa	White	7-Oct	Heather Grey
6	Malik	Reynolds	7-Oct	Heather Grey
7	Windy	Shaw	7-Oct	Heather Grey
8	Christopher	Peyton-Gomez	Pending	White
9	Michael	Lazar	14-Oct	White
10	Christiana	Chen	5-Oct	Dark Red
11	Sidney	Kelly	11-Oct	Dark Red

2. From the **Data** tab, click the **Group** command.

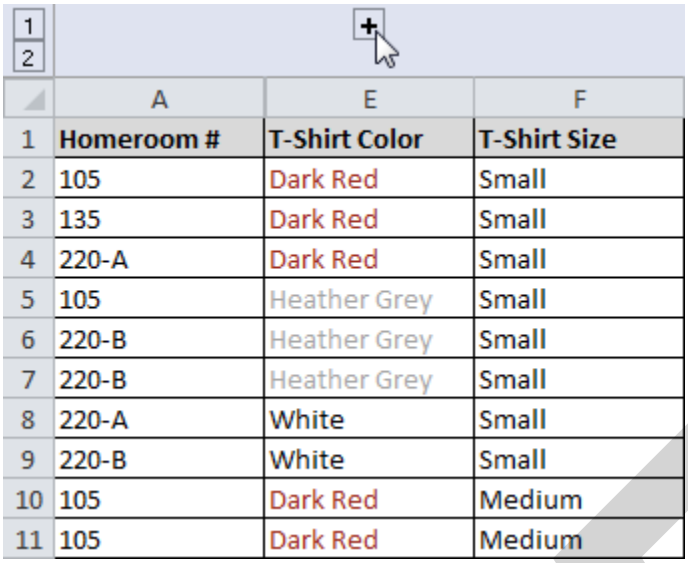


3. Excel will group the selected columns or rows.



	B	C	D	E
1	First Name	Last Name	Payment	T-Shirt Color
2	Esther	Yaron	7-Oct	Dark Red
3	Anisa	Naser	14-Oct	Dark Red
4	Brigid	Ellison	Pending	Dark Red
5	Melissa	White	7-Oct	Heather Grey
6	Malik	Reynolds	7-Oct	Heather Grey
7	Windy	Shaw	7-Oct	Heather Grey
8	Christopher	Peyton-Gomez	Pending	White
9	Michael	Lazar	14-Oct	White
10	Christiana	Chen	5-Oct	Dark Red
11	Sidney	Kelly	11-Oct	Dark Red

4. Click the minus sign—also known as the **Hide Detail** symbol—to hide the group.
5. The group will be hidden from view.



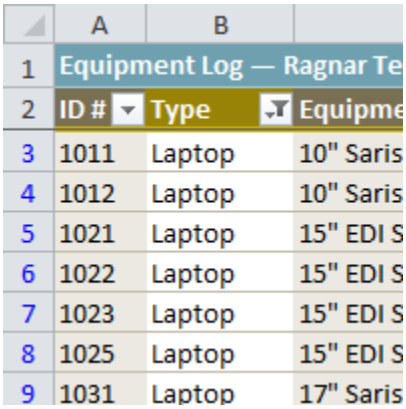
	A	E	F
1	**Homeroom #**	**T-Shirt Color**	**T-Shirt Size**
2	105	Dark Red	Small
3	135	Dark Red	Small
4	220-A	Dark Red	Small
5	105	Heather Grey	Small
6	220-B	Heather Grey	Small
7	220-B	Heather Grey	Small
8	220-A	White	Small
9	220-B	White	Small
10	105	Dark Red	Medium
11	105	Dark Red	Medium

Click the plus sign—also known as the **Show Detail** symbol—to show the group again.

Challenge!

1. Open an **existing Excel 2010 workbook**. If you want, you can use this **example**.
2. Outline your worksheet using the **Subtotal** command. If you are using the example, outline by T-shirt size.
3. Display the **first level** of groups in your outline.
4. Display the **highest level** to view your entire worksheet again.
5. Create your own **group of rows or columns**, then hide the group from view.
6. **Ungroup** any range of data.
7. **Remove** subtotaling from your worksheet.

Introduction



	A	B	
1	Equipment Log — Ragnar Te		
2	ID #	Type	Equipme
3	1011	Laptop	10" Saris
4	1012	Laptop	10" Saris
5	1021	Laptop	15" EDI S
6	1022	Laptop	15" EDI S
7	1023	Laptop	15" EDI S
8	1025	Laptop	15" EDI S
9	1031	Laptop	17" Saris

Filters can be used to narrow down the data in your worksheet and hide parts of it from view. While it may sound a little like grouping, filtering is different because it allows you to qualify and display only the data that interests you. For example, you could filter a list of survey participants to view only those who are between the ages of 25 and 34. You could also filter an inventory of paint colors to view anything that contains the word **blue**, such as **bluebell** or **robin's egg blue**.

In this lesson, you'll learn how to **filter** the data in your worksheet to display only the information you need.

Filtering data

Filters can be applied in different ways to improve the performance of your worksheet. You can filter text, dates, and numbers. You can even use more than one filter to further narrow your results.

Optional: You can download this **example** for extra practice.

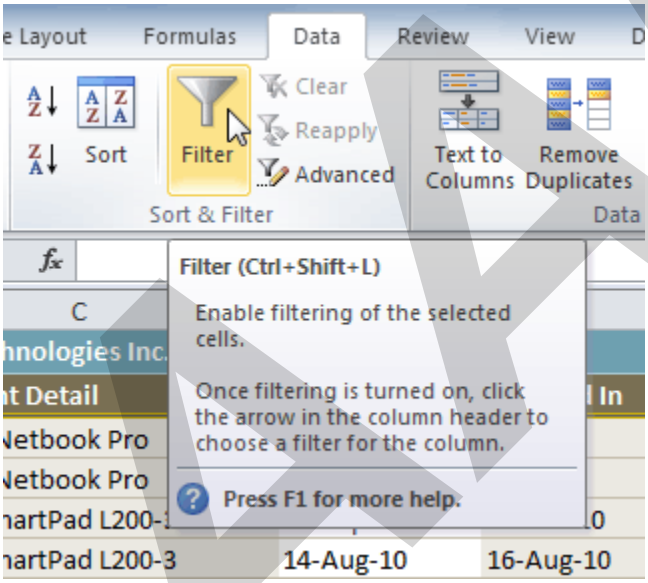
To filter data:

In this example, we'll filter the contents of an equipment log at a technology company. We'll display only the laptops and projectors that are available for checkout.

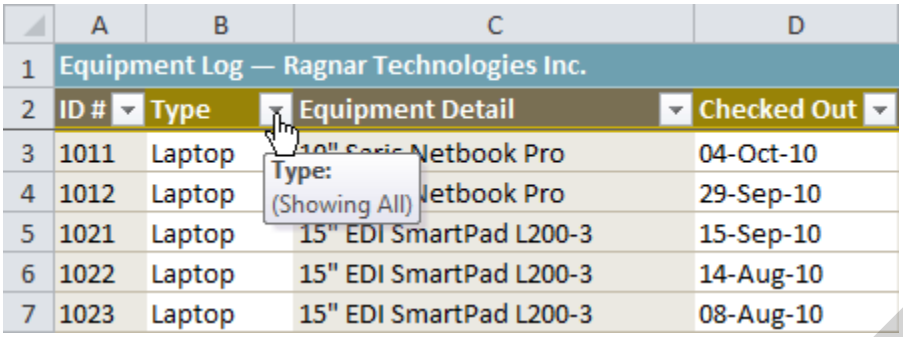
1. Begin with a worksheet that identifies each column using a header row.

	A	B	C	D
1	Equipment Log — Ragnar Technologies Inc.			
2	ID #	Type	Equipment Detail	Checked Out
3	1011	Laptop	10" Saris Netbook Pro	04-Oct-10
4	1012	Laptop	10" Saris Netbook Pro	29-Sep-10
5	1021	Laptop	15" EDI SmartPad L200-3	15-Sep-10
6	1022	Laptop	15" EDI SmartPad L200-3	14-Aug-10
7	1023	Laptop	15" EDI SmartPad L200-3	08-Aug-10
8	1025	Laptop	15" EDI SmartPad L200-4X	26-Sep-10
9	1031	Laptop	17" Saris X-10 Laptop	04-Oct-10
10	1032	Laptop	17" Saris X-10 Laptop	19-Sep-10
11	1033	Laptop	17" Saris X-10 Laptop	24-Sep-10
12	1034	Laptop	17" Saris X-10 Laptop	25-Aug-10
13	2050	Other	EDI SmartBoard L500-1	05-Oct-10
14	2051	Other	EDI SmartBoard L500-1	01-Oct-10
15	3000	Other	Saris Lumina Digital Camera	12-May-10

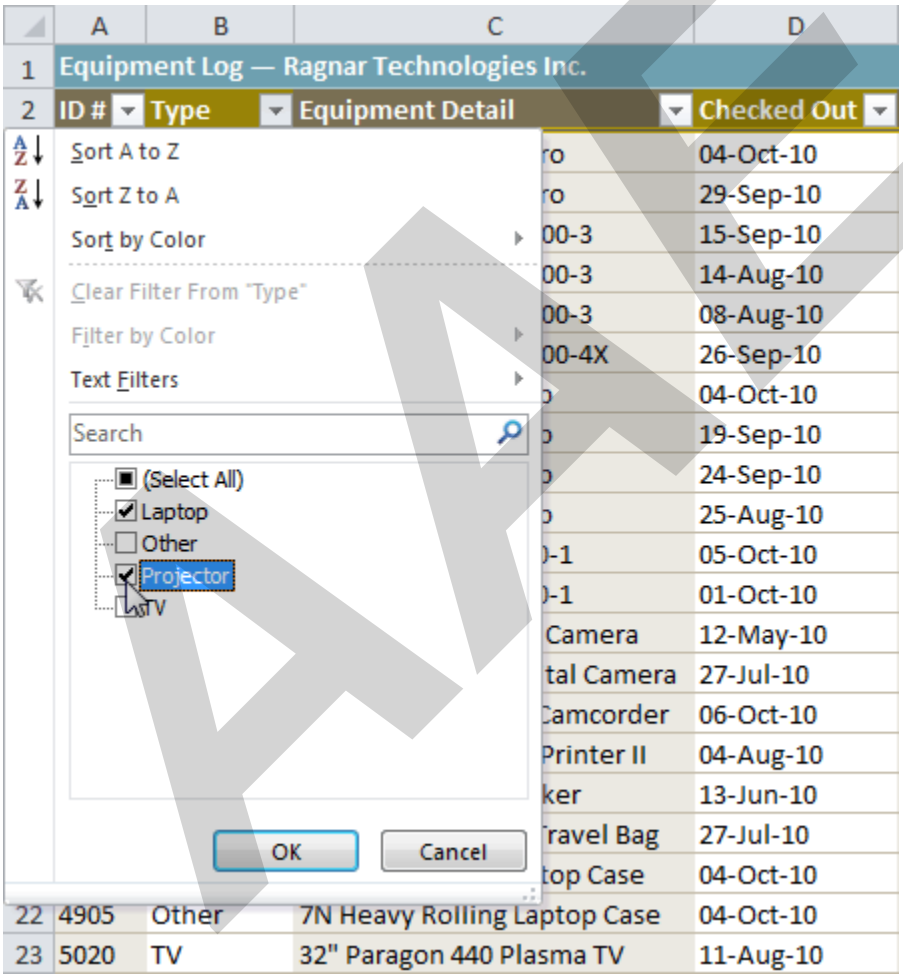
2. Select the **Data** tab, then locate the **Sort & Filter** group.
3. Click the **Filter** command.



4. Drop-down arrows will appear in the header of each column.
5. Click the **drop-down arrow** for the column you want to filter. In this example, we'll filter the Type column to view only certain types of equipment.



6. The **Filter** menu appears.
7. **Uncheck** the boxes next to the data you don't want to view, or uncheck the box next to **Select All** to quickly uncheck all.
8. **Check** the boxes next to the data you do want to view. In this example, we'll check Laptop and Projector to view only these types of equipment.



9. Click **OK**. All other data will be filtered, or temporarily hidden. Only laptops and projectors will be visible.

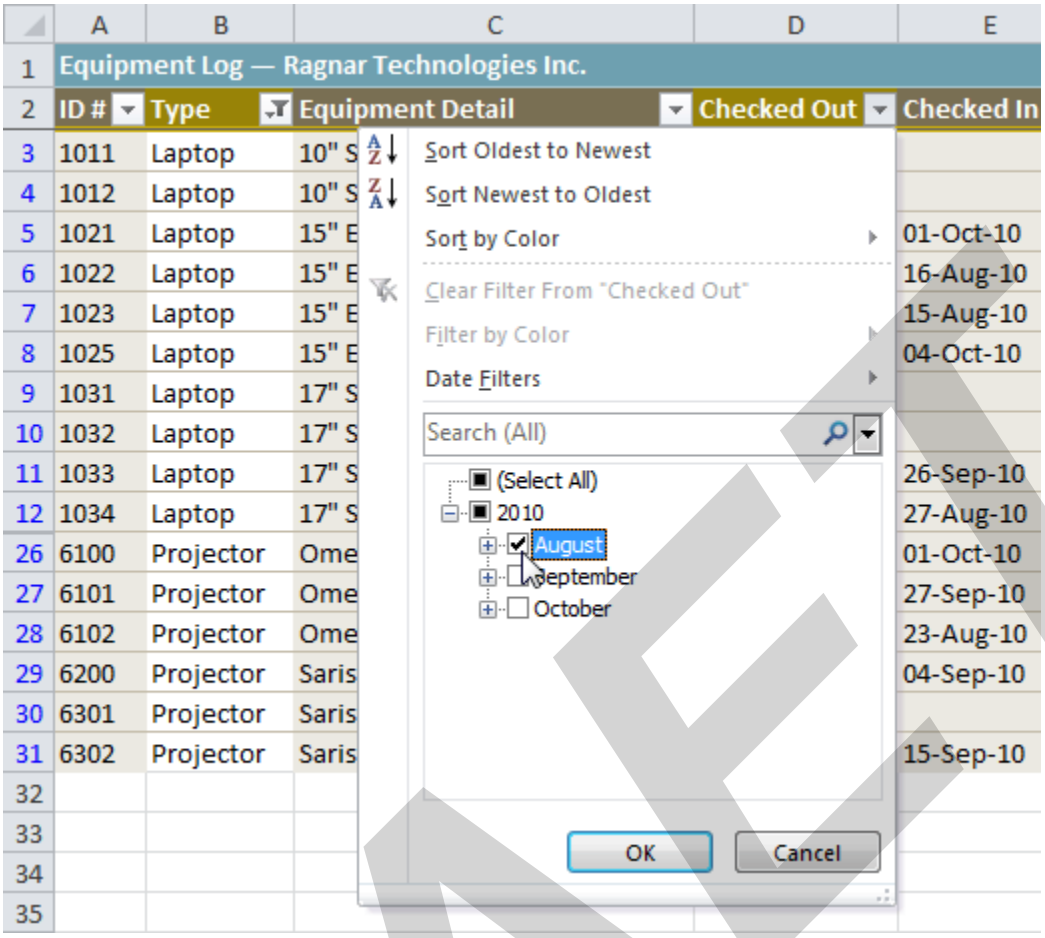
	A	B	C	D
1	Equipment Log — Ragnar Technologies Inc.			
2	ID #	Type	Equipment Detail	Checked Out
3	1011	Laptop	10" Saris Netbook Pro	04-Oct-10
4	1012	Laptop	10" Saris Netbook Pro	29-Sep-10
5	1021	Laptop	15" EDI SmartPad L200-3	15-Sep-10
6	1022	Laptop	15" EDI SmartPad L200-3	14-Aug-10
7	1023	Laptop	15" EDI SmartPad L200-3	08-Aug-10
8	1025	Laptop	15" EDI SmartPad L200-4X	26-Sep-10
9	1031	Laptop	17" Saris X-10 Laptop	04-Oct-10
10	1032	Laptop	17" Saris X-10 Laptop	19-Sep-10
11	1033	Laptop	17" Saris X-10 Laptop	24-Sep-10
12	1034	Laptop	17" Saris X-10 Laptop	25-Aug-10
26	6100	Projector	Omega VisX 1.0	28-Sep-10
27	6101	Projector	Omega VisX 1.0	26-Sep-10
28	6102	Projector	Omega VisX 1.0	22-Aug-10

Filtering options can also be found on the Home tab, condensed into the **Sort & Filter** command.

To add another filter:

Filters are additive, meaning you can use as many as you need to narrow your results. In this example, we'll work with a spreadsheet that has already been filtered to display only laptops and projectors. Now we'll display only laptops and projectors that were checked out during the month of August.

1. Click the **drop-down arrow** where you want to add a filter. In this example, we'll add a filter to the Checked Out column to view information by date.
2. **Uncheck** the boxes next to the data you don't want to view. **Check** the boxes next to the data you do want to view. In this example, we'll check the box next to **August.**

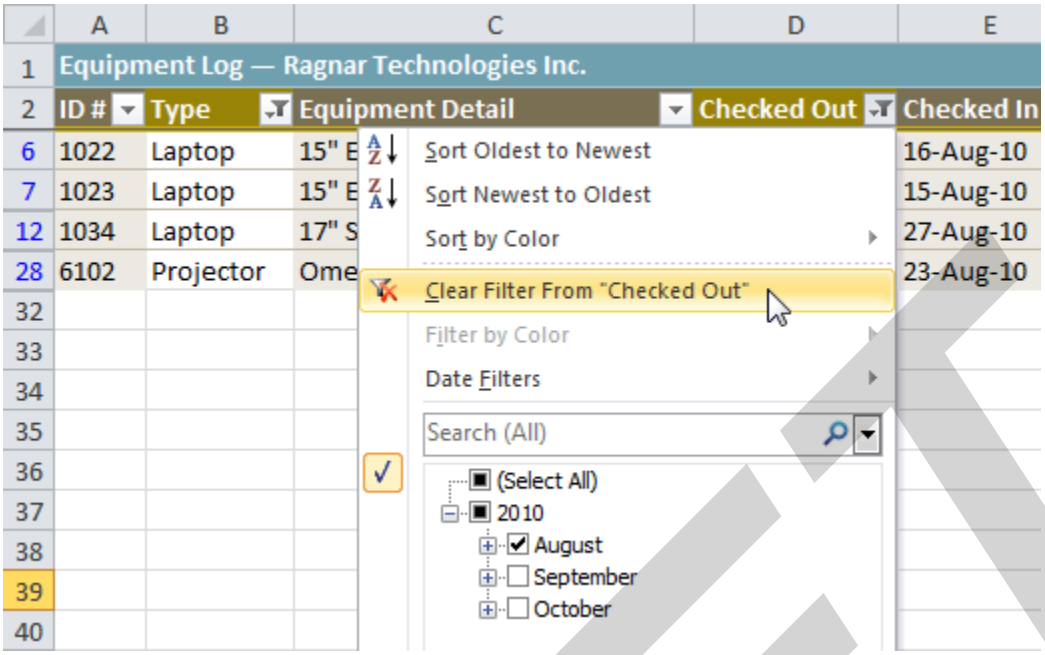


3. Click **OK**. In addition to the original filter, the new filter will be applied. The worksheet will be narrowed down even further.

	A	B	C	D	E
1	Equipment Log — Ragnar Technologies Inc.				
2	ID #	Type	Equipment Detail	Checked Out	Checked In
6	1022	Laptop	15" EDI SmartPad L200-3	14-Aug-10	16-Aug-10
7	1023	Laptop	15" EDI SmartPad L200-3	08-Aug-10	15-Aug-10
12	1034	Laptop	17" Saris X-10 Laptop	25-Aug-10	27-Aug-10
28	6102	Projector	Omega VisX 1.0	22-Aug-10	23-Aug-10
32					

To clear a filter:

1. Click the **drop-down arrow** in the column from which you want to clear the filter.
2. Choose **Clear Filter From**.



3. The filter will be cleared from the column. The data that was previously hidden will be on display once again.

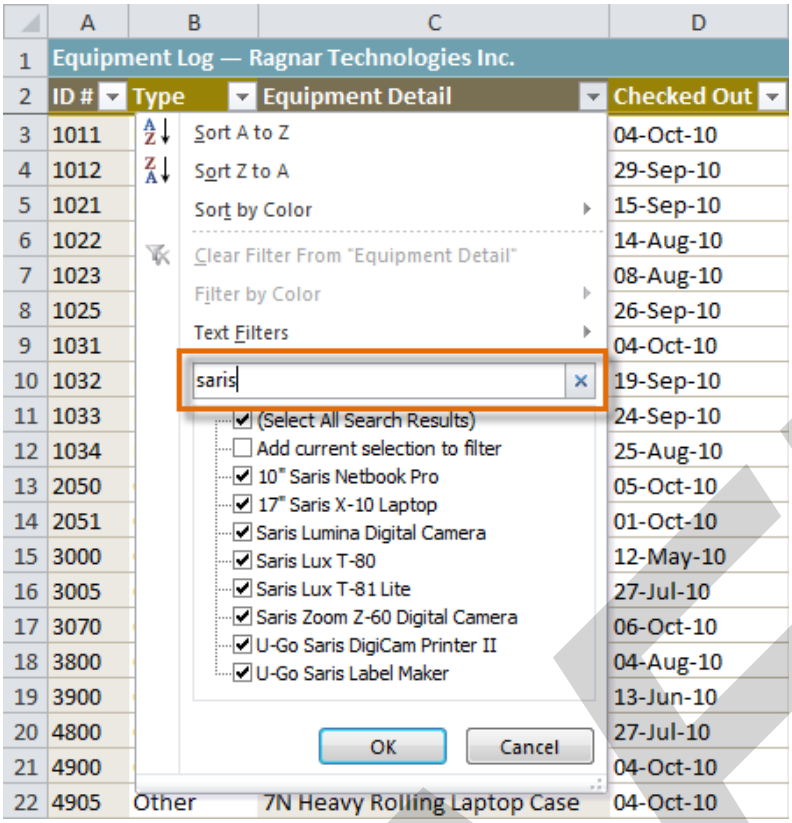
To instantly clear all filters from your worksheet, click the **Filter** command on the Data tab.

Advanced filtering

To filter using search:

Searching for data is a convenient alternative to checking or unchecking data from the list. You can search for data that contains an exact phrase, number, date, or simple fragment. For example, searching for the exact phrase **Saris X-10 Laptop** will display only Saris X-10 laptops. Searching for the word **Saris,** however, will display Saris X-10 laptops and any other Saris equipment, including projectors and digital cameras.

1. From the **Data** tab, click the **Filter** command.
2. Click the **drop-down arrow** in the column you want to filter. In this example, we'll filter the Equipment Detail column to view only a specific brand.
3. Enter the data you want to view in the **Search** box. We'll enter the word **Saris** to find all Saris brand equipment. The search results will appear automatically.



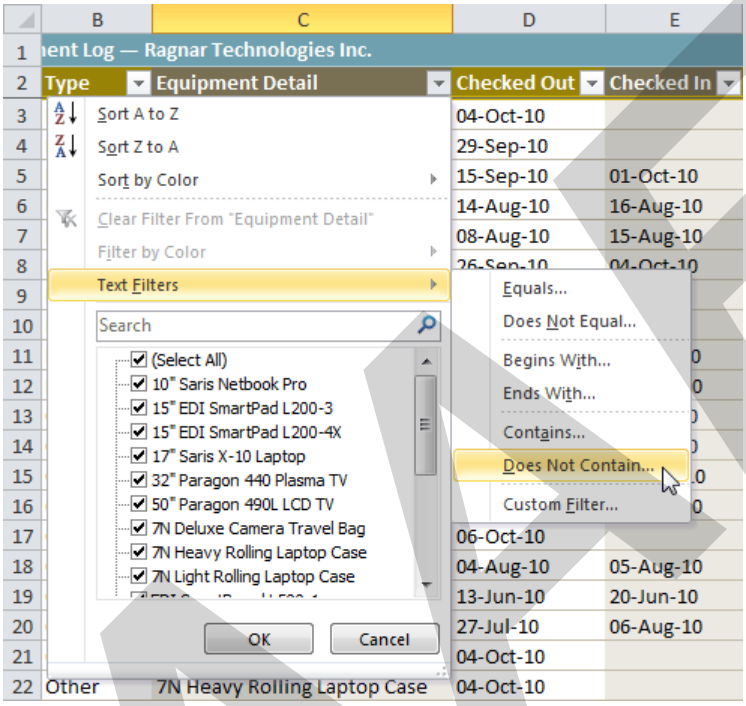
4. **Check** the boxes next to the data you want to display. We'll display all of the data that includes the brand name Saris.
5. Click **OK**. The worksheet will be filtered according to your search term.

	A	B	C	D
1	Equipment Log — Ragnar Technologies Inc.			
2	ID #	Type	Equipment Detail	Checked Out
3	1011	Laptop	10" Saris Netbook Pro	04-Oct-10
4	1012	Laptop	10" Saris Netbook Pro	29-Sep-10
9	1031	Laptop	17" Saris X-10 Laptop	04-Oct-10
10	1032	Laptop	17" Saris X-10 Laptop	19-Sep-10
11	1033	Laptop	17" Saris X-10 Laptop	24-Sep-10
12	1034	Laptop	17" Saris X-10 Laptop	25-Aug-10
15	3000	Other	Saris Lumina Digital Camera	12-May-10
16	3005	Other	Saris Zoom Z-60 Digital Camera	27-Jul-10
18	3800	Other	U-Go Saris DigiCam Printer II	04-Aug-10
19	3900	Other	U-Go Saris Label Maker	13-Jun-10
29	6200	Projector	Saris Lux T-80	01-Sep-10
30	6301	Projector	Saris Lux T-81 Lite	10-Sep-10
31	6302	Projector	Saris Lux T-81 Lite	08-Sep-10
32				

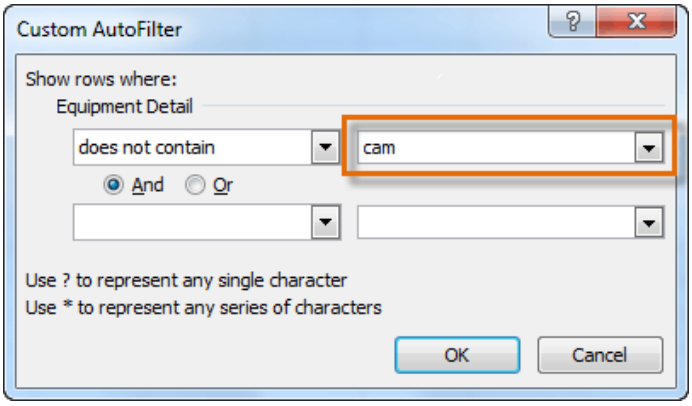
Using advanced text filters

Advanced text filters can be used to display more specific information, such as cells that contain a certain number of characters or data that does not contain a word you specify. In this example, we'll use advanced text filters to hide any equipment that is related to cameras, including digital cameras and camcorders.

1. From the **Data** tab, click the **Filter** command.
2. Click the **drop-down arrow** in the column of **text** you want to filter. In this example, we'll filter the Equipment Detail column to view only certain types of equipment.
3. Choose **Text Filters** to open the advanced filtering menu.
4. Choose a **filter**. In this example, we will choose **Does Not Contain** to view data that does not contain the text we specify.



5. The **Custom AutoFilter** dialog box appears.
6. Enter your **text** to the right of your filter. In this example, we'll enter **cam** to view data that does not contain these letters. That will exclude any equipment related to cameras, such as digital **cam**eras, **cam**corders, **cam**era bags, and the digi**cam** printer.

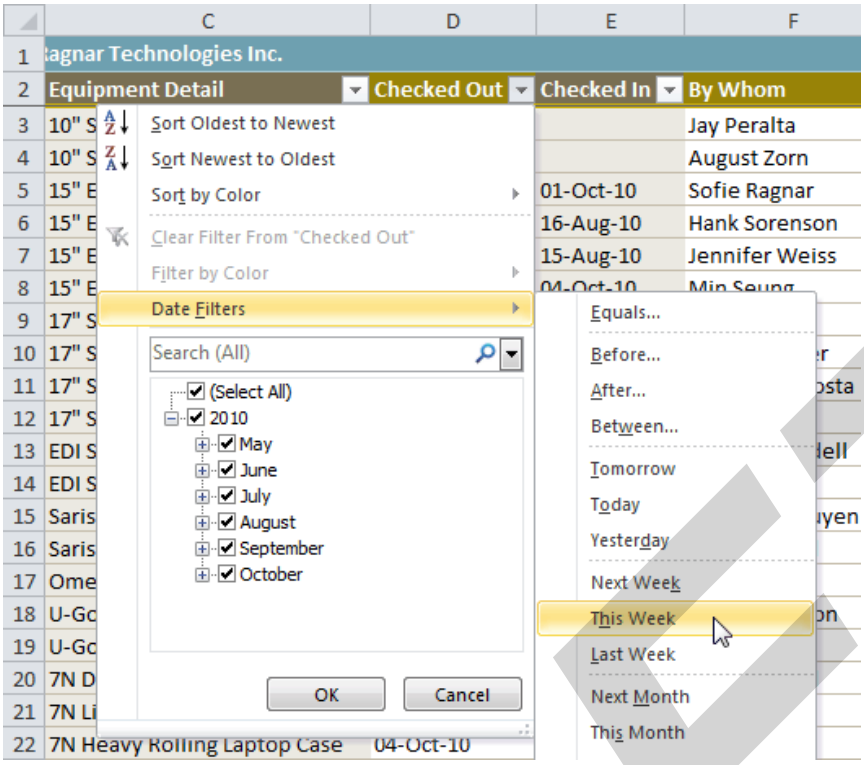


7. Click **OK**. The data will be filtered according to the filter you chose and the text you specified.

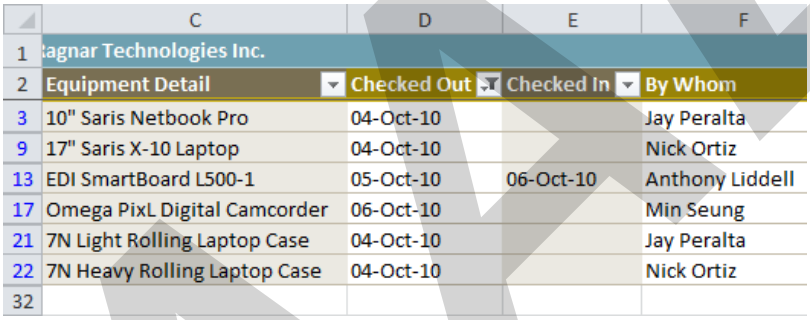
Using advanced date filters

Advanced date filters can be used to view information from a certain time period, such as last year, next quarter, or between two dates. Excel automatically knows your current date and time, making this tool easy to use. In this example, we'll use advanced date filters to view only the equipment that has been checked out this week.

1. From the **Data** tab, click the **Filter** command.
2. Click the **drop-down arrow** in the column of **dates** you want to filter. In this example, we'll filter the Checked Out column to view only a certain range of dates.
3. Choose **Date Filters** to open the advanced filtering menu.
4. Click a **filter**. We'll choose This Week to view equipment that has been checked out this week.



5. The worksheet will be filtered according to the date filter you chose.



	C	D	E	F
1	agnar Technologies Inc.			
2	Equipment Detail	Checked Out	Checked In	By Whom
3	10" Saris Netbook Pro	04-Oct-10		Jay Peralta
9	17" Saris X-10 Laptop	04-Oct-10		Nick Ortiz
13	EDI SmartBoard L500-1	05-Oct-10	06-Oct-10	Anthony Liddell
17	Omega PixL Digital Camcorder	06-Oct-10		Min Seung
21	7N Light Rolling Laptop Case	04-Oct-10		Jay Peralta
22	7N Heavy Rolling Laptop Case	04-Oct-10		Nick Ortiz
32				

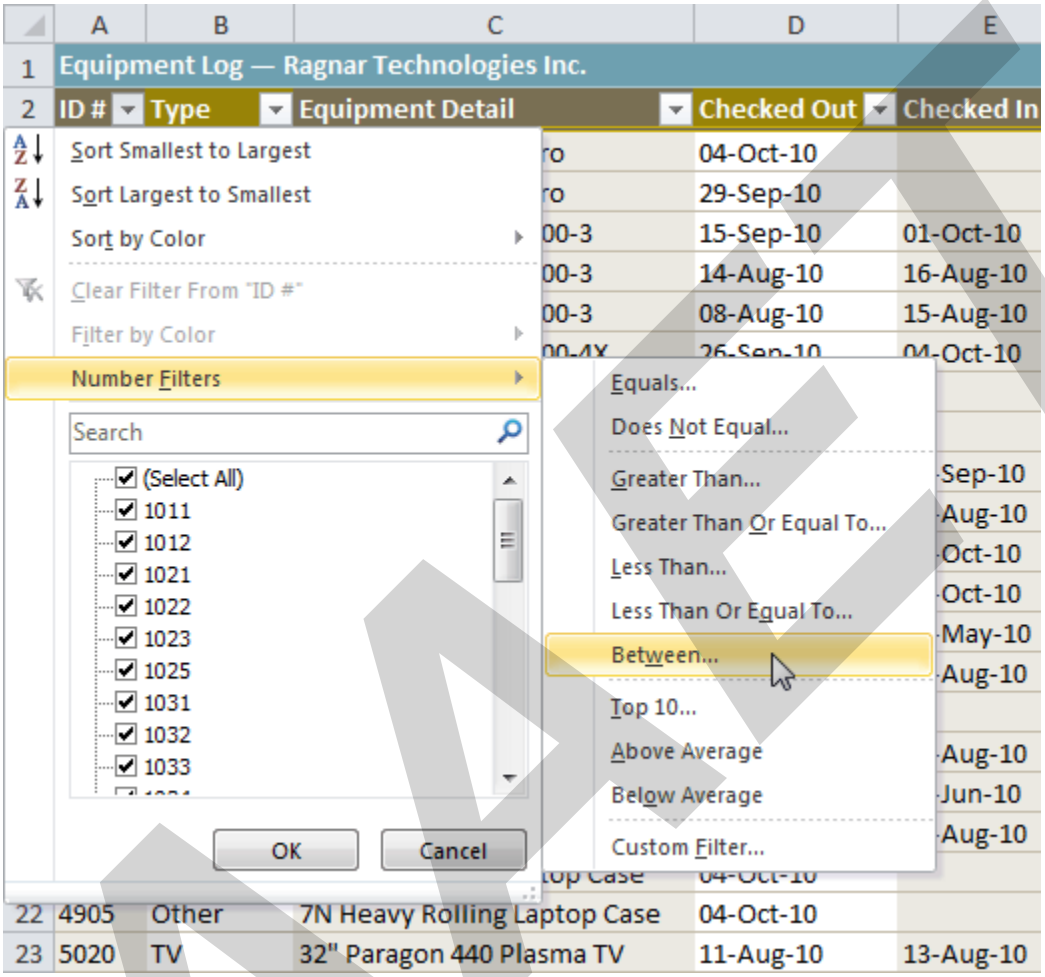
If you're working along with the example file, your results will be different from the images above. If you want, you can change some of the dates so the filter will give more results.

Using advanced number filters

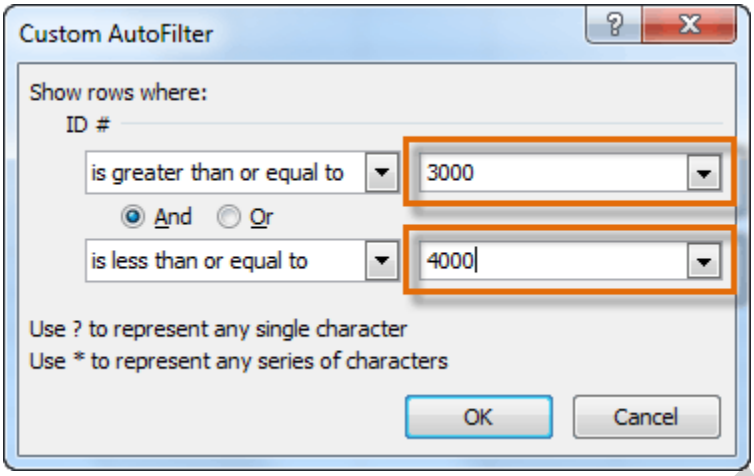
Advanced number filters allow you to manipulate numbered data in different ways. For example, in a worksheet of exam grades you could display the top and bottom numbers to view the highest and lowest scores. In this example, we'll display only certain types of equipment based on the range of ID #s that have been assigned to them.

1. From the **Data** tab, click the **Filter** command.

2. Click the **drop-down arrow** in the column of **numbers** you want to filter. In this example, we'll filter the ID # column to view only a certain range of ID #s.
3. Choose **Number Filters** to open the advanced filtering menu.
4. Choose a **filter**. In this example, we'll choose Between to view ID #s between the numbers we specify.



5. Enter a **number** to the right of each filter. In this example, we'll view ID #s greater than or equal to 3000 but less than or equal to 4000. This will display ID #s in the 3000-4000 range.



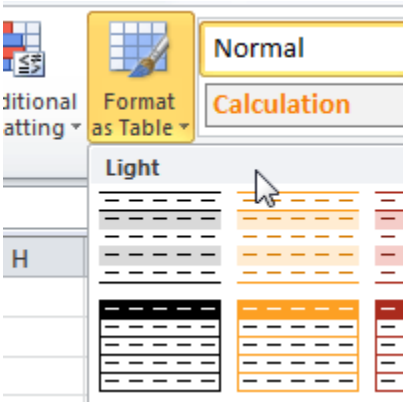
6. Click **OK**. The data will be filtered according to the filter you chose and the numbers you specified.

	A	B	C	D
1	Equipment Log — Ragnar Technologies Inc.			
2	ID #	Type	Equipment Detail	Checked Out
15	3000	Other	Saris Lumina Digital Camera	12-May-10
16	3005	Other	Saris Zoom Z-60 Digital Camera	27-Jul-10
17	3070	Other	Omega PixL Digital Camcorder	06-Oct-10
18	3800	Other	U-Go Saris DigiCam Printer II	04-Aug-10
19	3900	Other	U-Go Saris Label Maker	13-Jun-10
32				

Challenge!

1. Open an **existing Excel 2010 workbook**. If you want, you can use this **example**.
2. **Filter a column** of data. If you are using the example, filter the Type column so it displays only laptops and other equipment.
3. Add **another filter** by searching for the data you want. If you are using the example, search for EDI brand equipment in the Item Description column.
4. **Clear** both filters.
5. Use an **advanced text filter** to view data that does not contain a certain word or phrase. If you are using the example, display data that does not contain the word **cam**. This should exclude any camera-related equipment, such as digital **cam**eras and **cam**corders.
6. Use an **advanced date filter** to view data from a certain time period. If you are using the example, display only the equipment that was checked out in **September 2010**.
7. Use an **advanced number filter** to view numbers less than a certain amount. If you are using the example, display all ID #s less than 3000.

Introduction



Once you have entered information into a spreadsheet, you may want to format it. Formatting your spreadsheet can not only improve the look and feel of your spreadsheet, but it also can make it easier to use. In a previous lesson, we discussed many manual formatting options such as bold and italics. In this lesson, you'll learn how to **format as a table** to take advantage of the tools and predefined table styles available in Excel 2010.

Formatting tables

Just like regular formatting, tables can help to **organize** your content and make it easier for you locate the information you need. To use tables effectively, you'll need to know how to **format** information as a table, **modify** tables, and apply **table styles**.

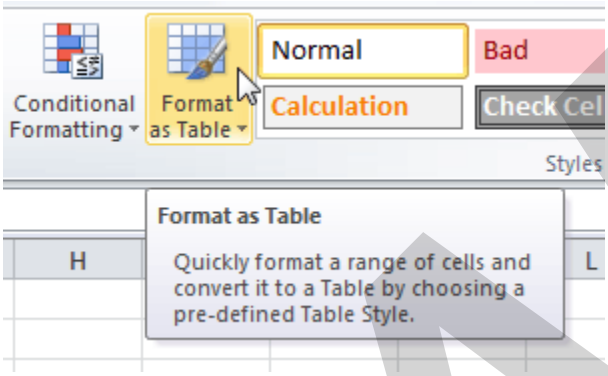
Optional: You can download this **example** for extra practice.

To format information as a table:

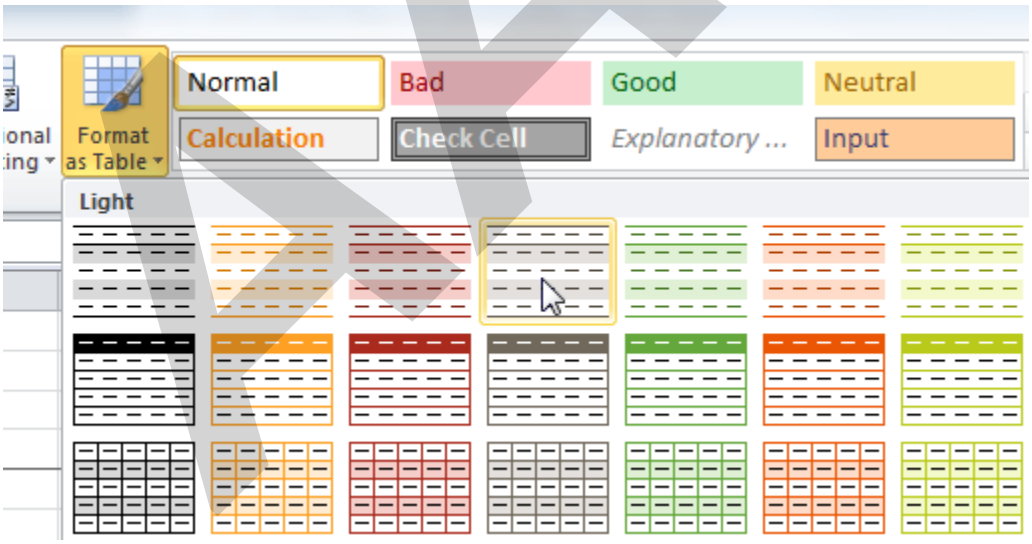
1. Select the cells you want to format as a table. In this example, an invoice, we'll format the cells containing the column headers and order details.

	A	B	C	D
1	Mongibello ARTISAN PASTA INVOICE		Date:	11/13/10
2			Invoice #:	145-10
3			Customer:	Café Aurora
4	Quantity	Description	Unit Price	Line Total
5	5	Fettuccini, Black Bean Flavor	$12.00	$60.00
6	7	Fettuccini, Sundried Tomato Flavor	$10.00	$70.00
7	9	Fettuccini, Thai Basil Flavor	$10.00	$90.00
8	6	Penne, Roasted Red Pepper Flavor	$14.00	$84.00
9	3	Penne, Massaman Curry Flavor	$14.00	$42.00
10	4	Penne, Wild Mushroom Flavor	$15.00	$60.00
11				

2. Click the **Format as Table** command in the **Styles** group on the Home tab.

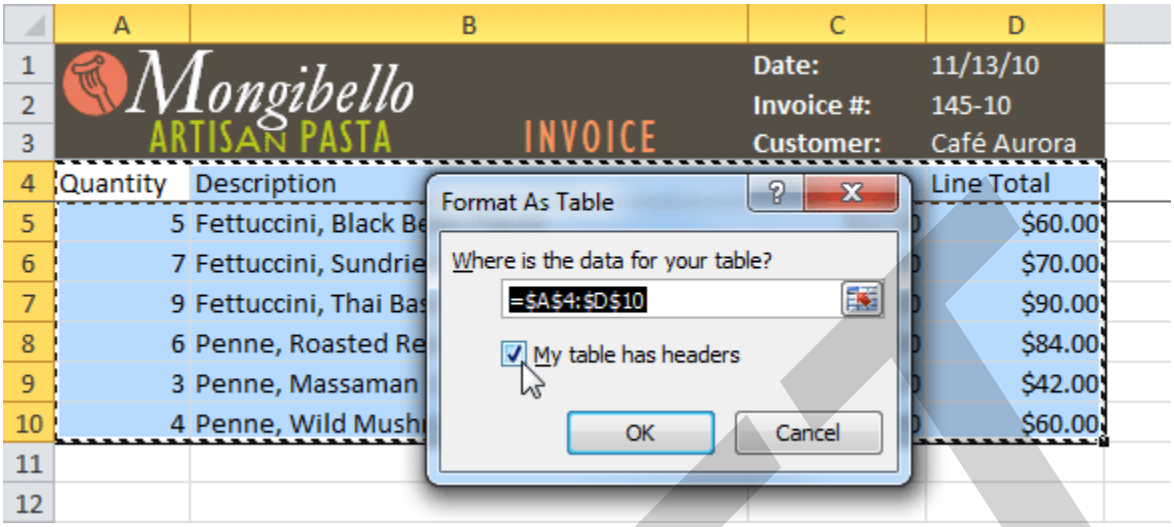


3. A list of predefined **table styles** will appear. Click a table style to select it.

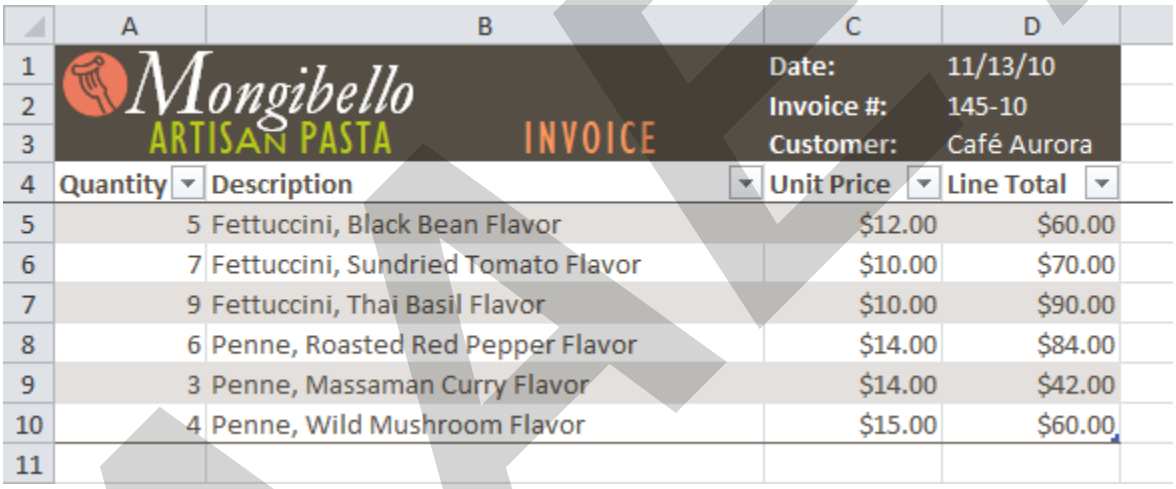


4. A dialog box will appear, confirming the **range** of cells you have selected for your table. The cells will appear selected in the spreadsheet, and the range will appear in the dialog box.
5. If necessary, **change** the range by selecting a new range of cells directly on your spreadsheet.

6. If your table has headers, check the box next to **My table has headers**.



7. Click **OK**. The data will be formatted as a table in the style you chose.



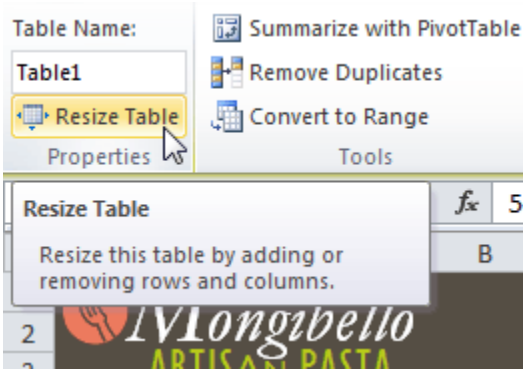
Tables include **filtering** by default. You can filter your data at any time using the **drop-down arrows** in the header. To learn more, review our **Filtering Data** lesson.

To convert a table back into normal cells, click the **Convert to Range** command in the **Tools** group. The filters and Design tab will then disappear, but the cells will retain their data and formatting.

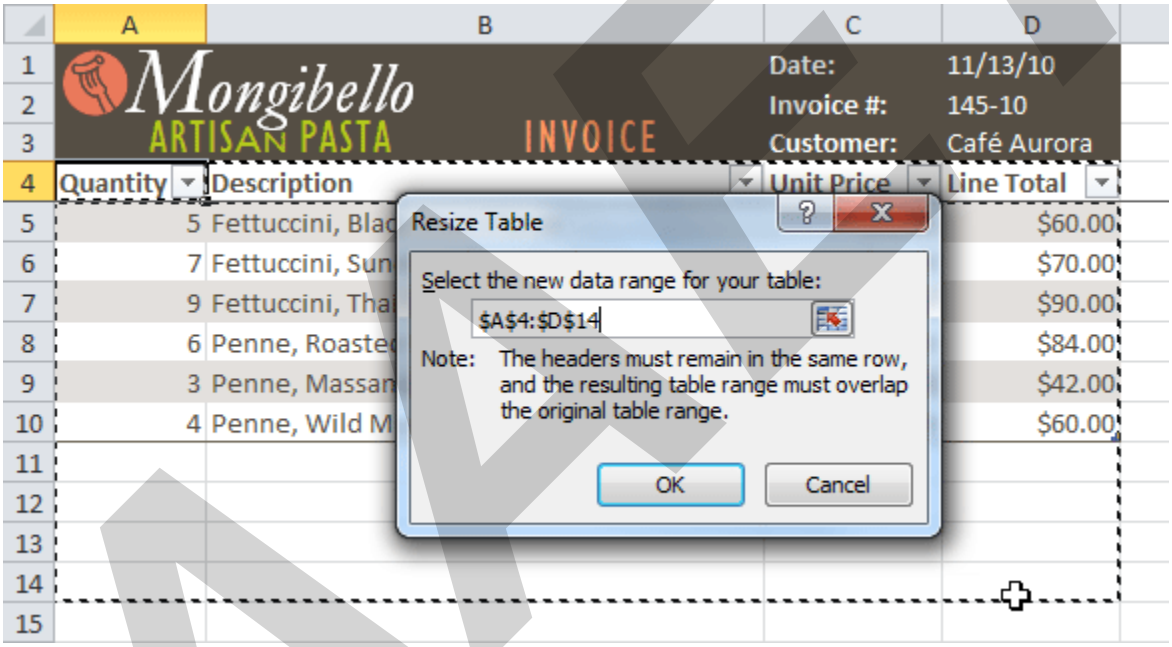
Modifying tables

To add rows or columns:

1. Select **any cell** in your table. The **Design** tab will appear on the Ribbon.
2. From the Design tab, click the **Resize Table** command.



3. Directly on your spreadsheet, select the new **range** of cells you want your table to cover. You must select your original table cells as well.

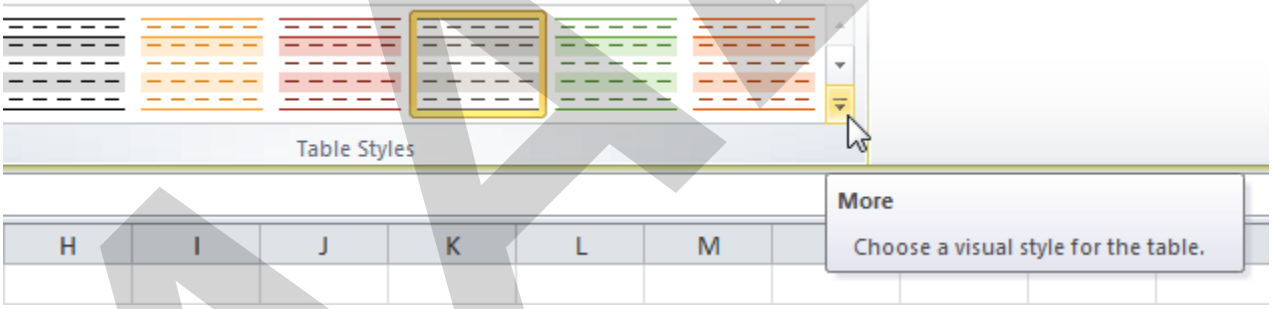


4. Click **OK**. The new rows and/or columns will be added to your table.

	A	B	C	D
1	Mongibello ARTISAN PASTA INVOICE		Date:	11/13/10
2			Invoice #:	145-10
3			Customer:	Café Aurora
4	Quantity	Description	Unit Price	Line Total
5	5	Fettuccini, Black Bean Flavor	$12.00	$60.00
6	7	Fettuccini, Sundried Tomato Flavor	$10.00	$70.00
7	9	Fettuccini, Thai Basil Flavor	$10.00	$90.00
8	6	Penne, Roasted Red Pepper Flavor	$14.00	$84.00
9	3	Penne, Massaman Curry Flavor	$14.00	$42.00
10	4	Penne, Wild Mushroom Flavor	$15.00	$60.00
11				
12				
13				
14				
15				

To change the table style:

1. Select **any cell** in your table. The **Design** tab will appear.
2. Locate the **Table Styles** group. Click the **More** drop-down arrow to see all of the table styles.



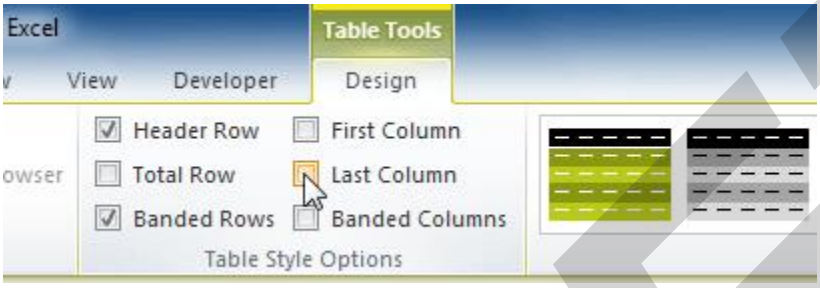
3. Hover the mouse over the various styles to see a live preview.
4. Select the desired style. The table style will appear in your worksheet.

	A	B	C	D
1	Mongibello ARTISAN PASTA INVOICE		Date:	11/13/10
2			Invoice #:	145-10
3			Customer:	Café Aurora
4	Quantity	Description	Unit Price	Line Total
5	5	Fettuccini, Black Bean Flavor	$12.00	$60.00
6	7	Fettuccini, Sundried Tomato Flavor	$10.00	$70.00
7	9	Fettuccini, Thai Basil Flavor	$10.00	$90.00
8	6	Penne, Roasted Red Pepper Flavor	$14.00	$84.00
9	3	Penne, Massaman Curry Flavor	$14.00	$42.00
10	4	Penne, Wild Mushroom Flavor	$15.00	$60.00
11				

To change table style options:

When using an Excel table, you can turn various options **on** or **off** to change its appearance. There are six options: **Header Row**, **Total Row**, **Banded Rows**, **First Column**, **Last Column**, and **Banded Columns**.

1. Select **any cell** in your table. The **Design** tab will appear.
2. From the **Design** tab, **check** or **uncheck** the desired options in the **Table Style Options** group.

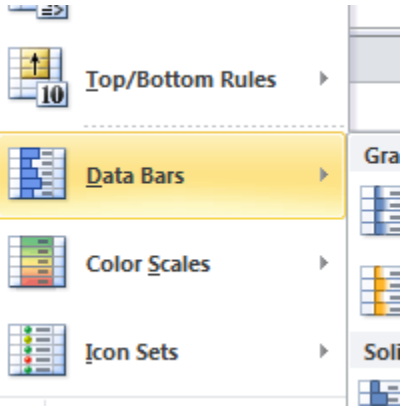


Depending on the **table style** you're using, certain **table style options** may have a different effect. You may need to **experiment** to get the exact look you want.

Challenge!

1. Open an **existing Excel 2010 workbook**. If you want, you can use this **example**.
2. Format a range of cells as a **table**. If you are using the example, format the column headers (Quantity, Description, etc.) and the order details.
3. **Add** a row or a column.
4. Change the **table style options**. If you are using the example, add a total row.
5. Change the **table style** several times. Take note of how the table options may appear different depending on the style you use.

Introduction



Let's say you have a spreadsheet with thousands of rows of data. It would be extremely difficult to see patterns and trends just from examining the raw data. Excel gives us several tools that will make this task easier. One of these tools is called **conditional formatting**. With conditional formatting, you can apply formatting to **one or more cells** based on the value of the cell. You can highlight **interesting** or **unusual** cell values, and visualize the data using formatting such as **colors**, **icons**, and **data bars**.

In this lesson, you'll learn how to **apply**, **modify**, and **remove** conditional formatting rules.

Conditional formatting

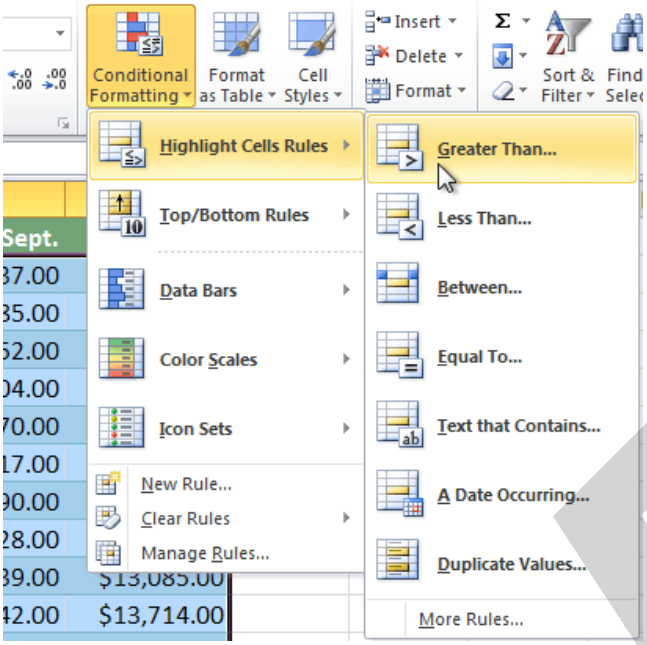
Conditional formatting applies one or more **rules** to any cells you want. An example of a rule might be **If the value is greater than 5000, color the cell yellow**. By applying this rule to the cells in a worksheet, you'll be able to see at a glance which cells are more than 5000. There are also rules that can mark the **top 10 items**, all cells that are **below the average**, cells that are within a certain **date range**, and many more.

Optional: You can download this **example** for extra practice.

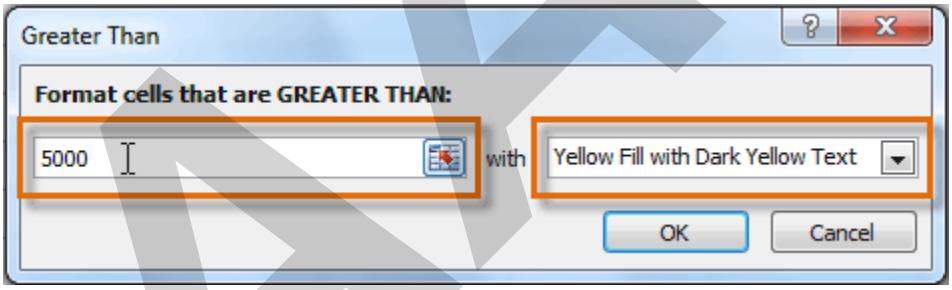
To create a conditional formatting rule:

1. Select the **cells** you want to add formatting to.
2. In the **Home** tab, click the **Conditional Formatting** command. A drop-down menu will appear.

3. Select **Highlight Cells Rules** or **Top/Bottom Rules**. We'll choose Highlight Cells Rules for this example. A menu will appear with several **rules**.
4. Select the desired rule (**Greater Than**, for example).



5. From the dialog box, enter a **value** in the space provided, if applicable. In this example, we want to format cells that are greater than $5000, so we'll enter 5000 as our value. If you want, you can enter a **cell reference**instead of a number.
6. Select a formatting style from the drop-down menu.



7. The formatting will be applied to the selected cells.

$9,355.00	$1,100.00	$10,185.00	$18,749.00
$6,702.00	$2,116.00	$13,452.00	$8,046.00
$4,415.00	$1,089.00	$4,404.00	$20,114.00
$11,601.00	$1,122.00	$3,170.00	$10,733.00
$3,726.00	$1,135.00	$8,817.00	$18,524.00
$9,007.00	$2,113.00	$13,090.00	$13,953.00
$4,505.00	$1,024.00	$3,528.00	$15,275.00
$3,973.00	$1,716.00	$4,839.00	$13,085.00

If you want, you can apply more than one rule to your cells.

Conditional formatting presets

Excel has several **presets** you can use to quickly apply conditional formatting to your cells. They are grouped into three categories:

- **Data bars** are horizontal bars added to each cell, much like a **bar graph**.

$3,863.00	$1,117.00	$8,237.00	$8,690.00
$9,355.00	$1,100.00	$10,185.00	$18,749.00
$6,702.00	$2,116.00	$13,452.00	$8,046.00
$4,415.00	$1,089.00	$4,404.00	$20,114.00

- **Color scales** change the color of each cell based on its value. Each color scale uses a **two- or three-color gradient**. For example, in the **Green-Yellow-Red** color scale, the **highest** values are green, the **average**values are yellow, and the **lowest** values are red.

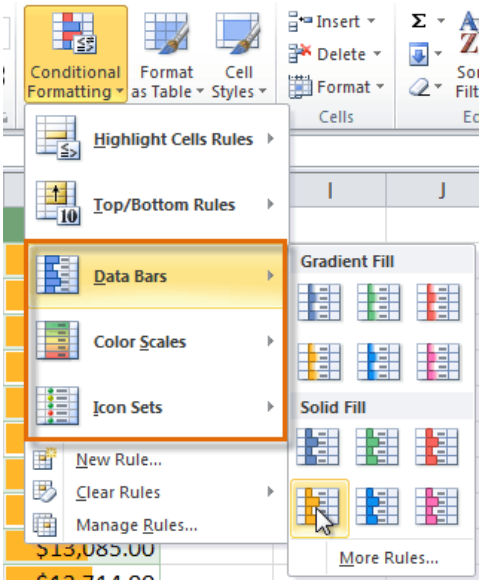
$3,863.00	$1,117.00	$8,237.00	$8,690.00
$9,355.00	$1,100.00	$10,185.00	$18,749.00
$6,702.00	$2,116.00	$13,452.00	$8,046.00
$4,415.00	$1,089.00	$4,404.00	$20,114.00

- **Icon sets** add a specific icon to each cell based on its value.

$3,863.00	$1,117.00	$8,237.00	$8,690.00
$9,355.00	$1,100.00	$10,185.00	$18,749.00
$6,702.00	$2,116.00	$13,452.00	$8,046.00
$4,415.00	$1,089.00	$4,404.00	$20,114.00

To use preset conditional formatting:

1. Select the cells you want to add formatting to.
2. In the **Home** tab, click the **Conditional Formatting** command. A drop-down menu will appear.
3. Select **Data Bars**, **Color Scales**, or **Icon Sets**. Then select the desired preset.

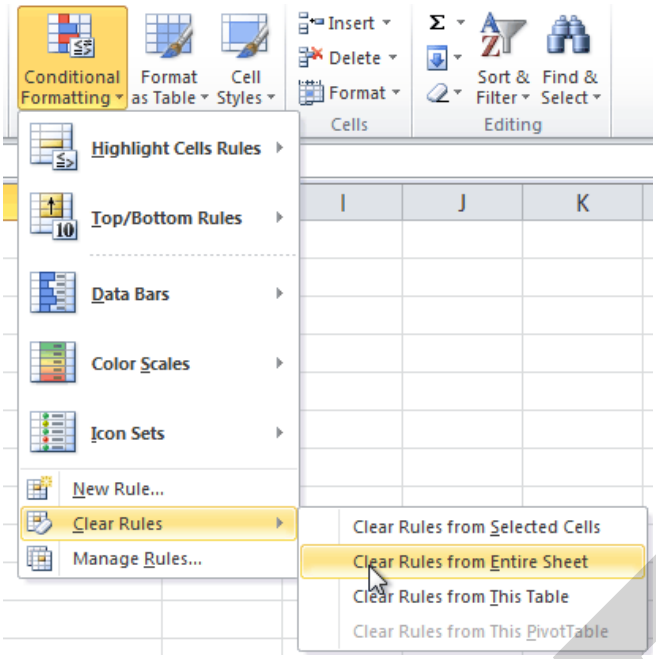


4. The conditional formatting will be applied to the selected cells.

$3,863.00	$1,117.00	$8,237.00	$8,690.00
$9,355.00	$1,100.00	$10,185.00	$18,749.00
$6,702.00	$2,116.00	$13,452.00	$8,046.00
$4,415.00	$1,089.00	$4,404.00	$20,114.00

To remove conditional formatting rules:

1. Select the cells that have conditional formatting.
2. In the **Home** tab, click the **Conditional Formatting** command. A drop-down menu will appear.
3. Select **Clear Rules**.
4. A menu will appear. You can choose to clear rules from the **Selected Cells**, **Entire Sheet**, **This Table**, or **This PivotTable**. In this example, we'll clear rules from the entire sheet.

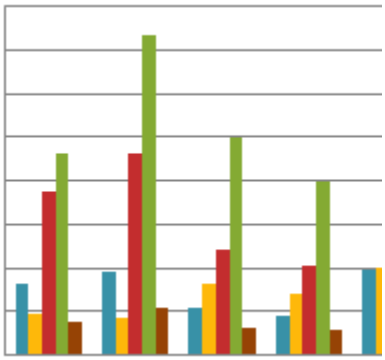


You can edit or delete **individual** rules by clicking the **Conditional Formatting** command and selecting **Manage Rules**. This is especially useful if you have applied **multiple rules** to the cells.

Challenge!

1. Open an **existing Excel 2010 workbook**. If you want, you can use this **example**.
2. Apply conditional formatting to a range of cells with **numerical values**. If you are using the example, apply formatting to all of the sales data.
3. Apply a **second conditional formatting rule** to the same set of cells.
4. Explore the **Conditional Formatting Rules Manager** dialog box.
5. **Clear** all conditional formatting rules from the worksheet.

Introduction



A **chart** is a tool you can use in Excel to **communicate data graphically**. Charts allow your audience to see the **meaning behind the numbers**, and they make showing **comparisons** and **trends** much easier. In this lesson, you'll learn how to **insert** charts and **modify** them so they communicate information effectively.

Charts

Excel workbooks can contain **a lot of data**, and this data can often be difficult to interpret. For example, where are the highest and lowest values? Are the numbers increasing or decreasing?

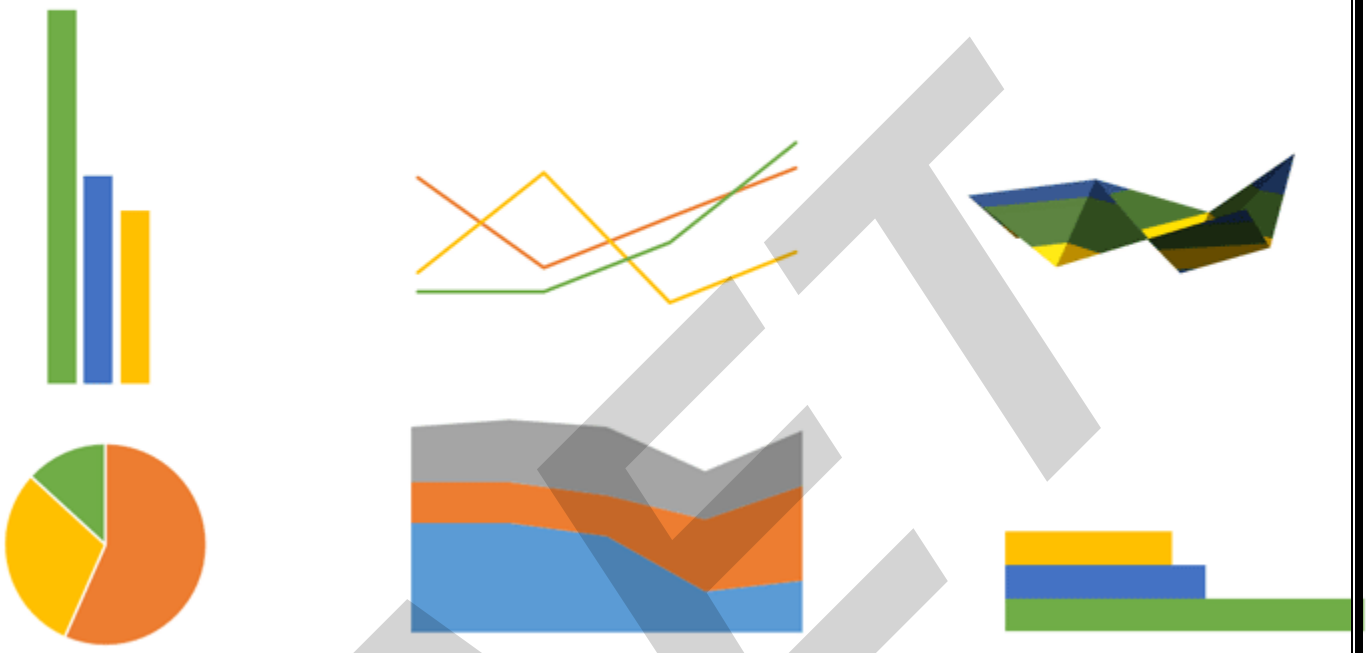
The answers to questions like these can become much clearer when data is represented as a **chart**. Excel has various types of charts, so you can choose one that most effectively represents your data.

Optional: You can download this **example** for extra practice.

Types of charts

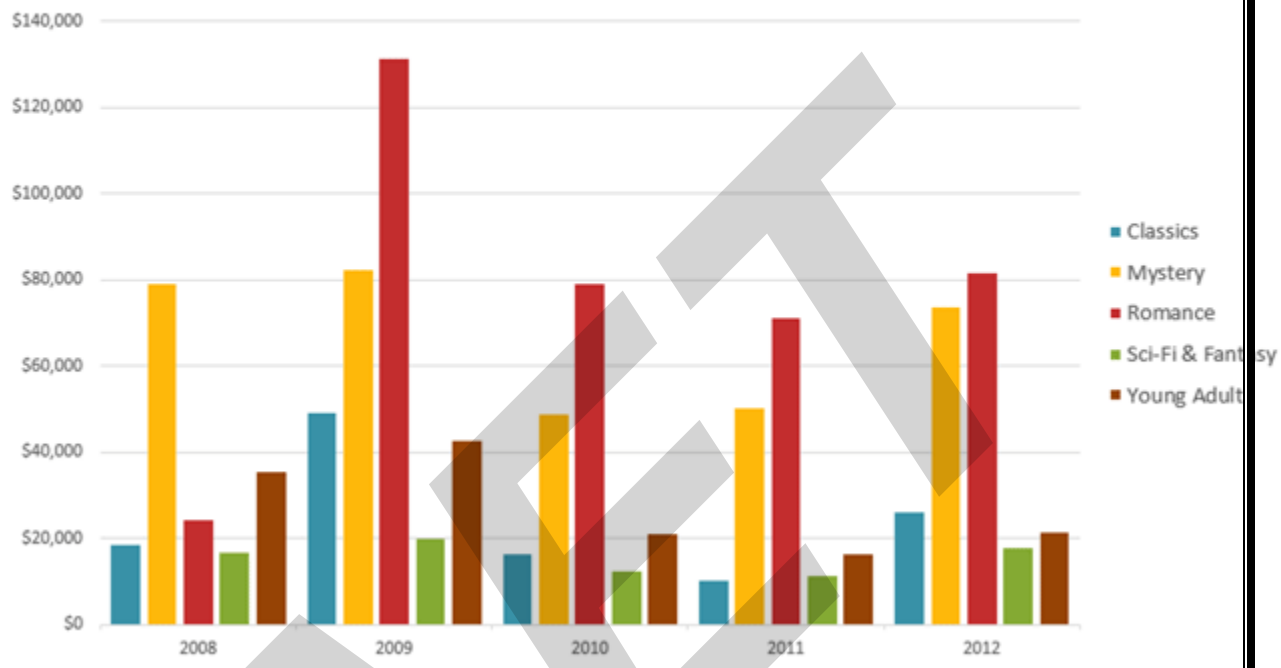
Click the arrows in the slideshow below to view examples of some of the types of charts available in Excel.

Types of Charts

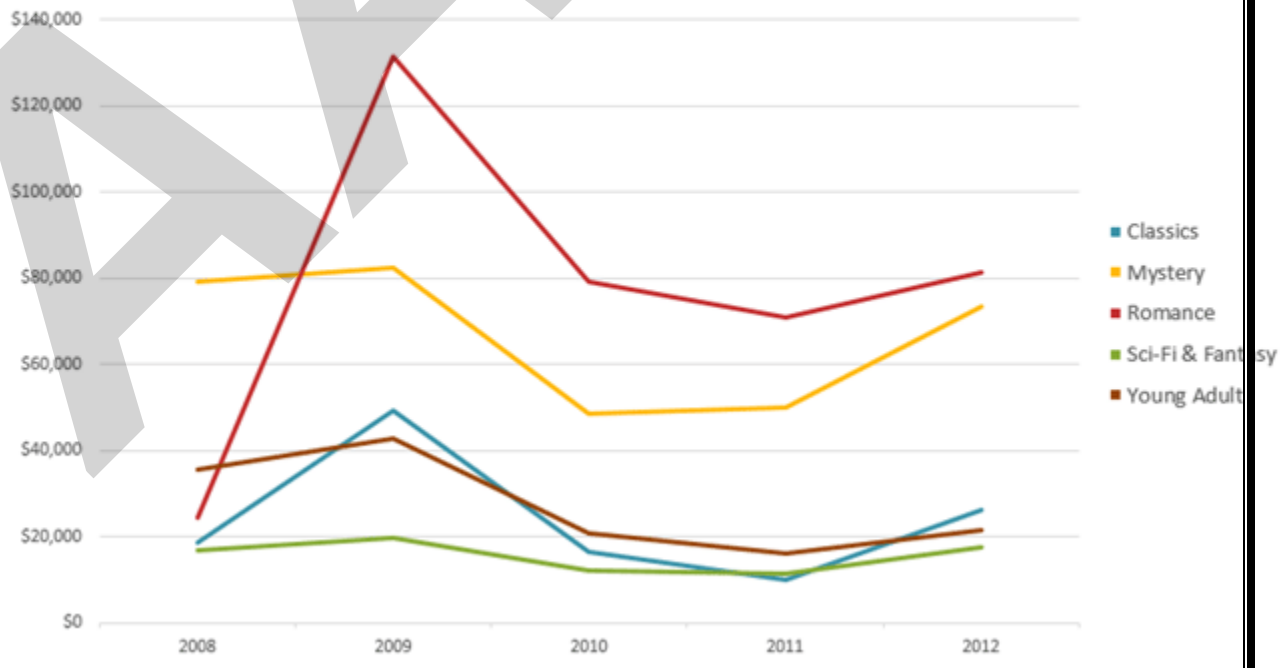


- Excel has a variety of chart types, each with its own advantages. Click the arrows to see some of the different types of charts available in Excel.

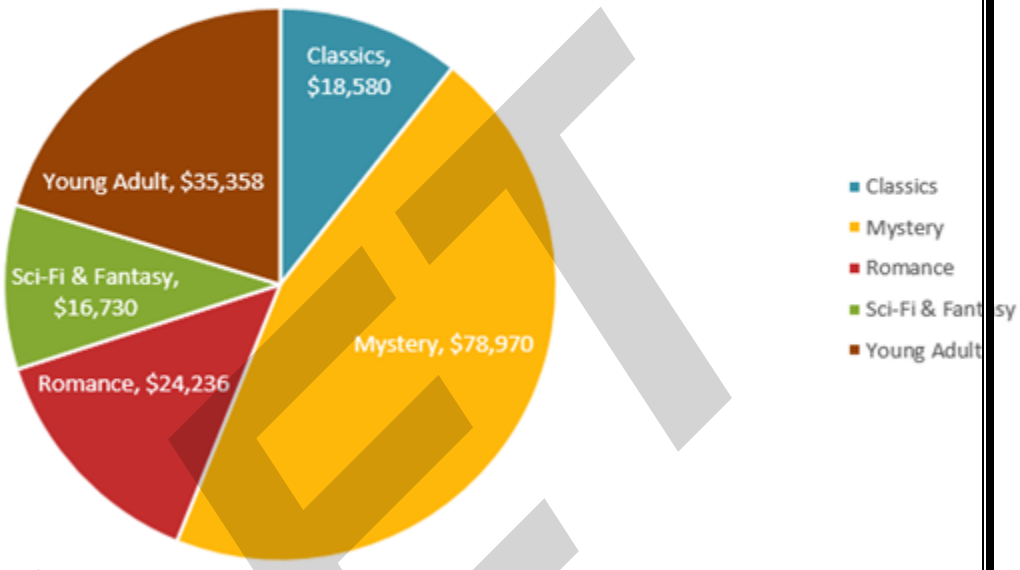
Column


$140,000
$120,000
$100,000
$80,000
$60,000
$40,000
$20,000
$0
2008
2009
2010
2011
2012
Classics
Mystery
Romance
Sci-Fi & Fantasy
Young Adult

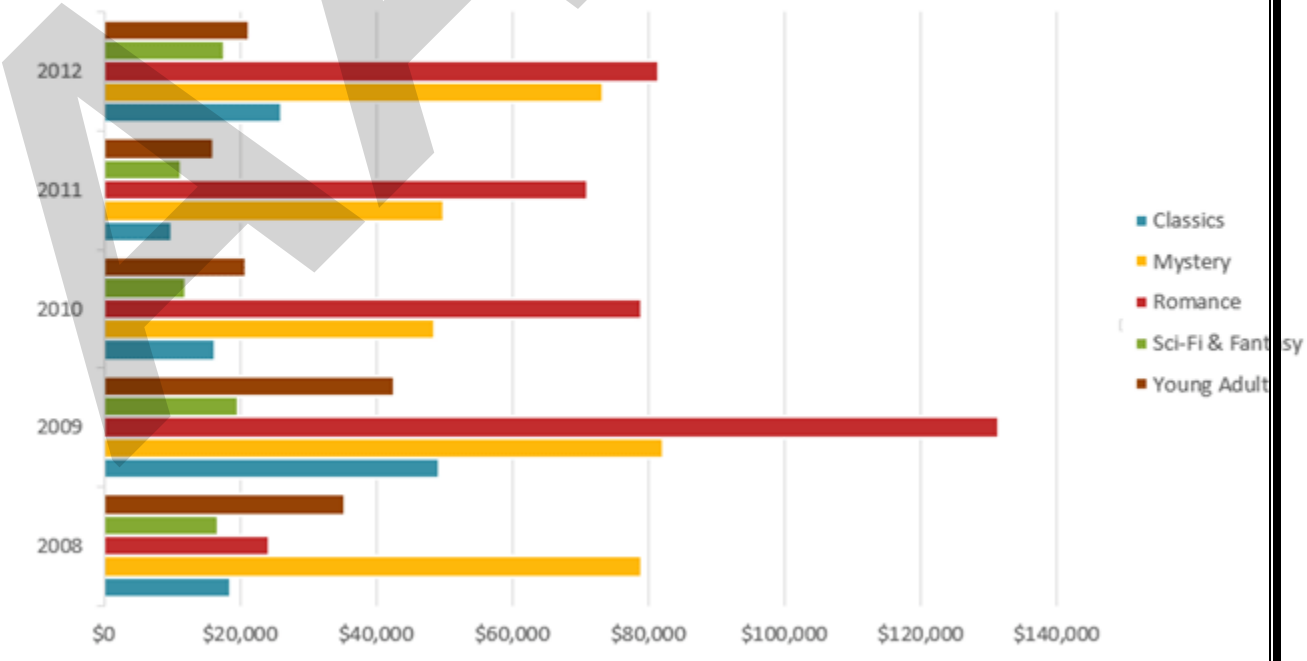
Line


$140,000
$120,000
$100,000
$80,000
$60,000
$40,000
$20,000
$0
2008
2009
2010
2011
2012
Classics
Mystery
Romance
Sci-Fi & Fantasy
Young Adult

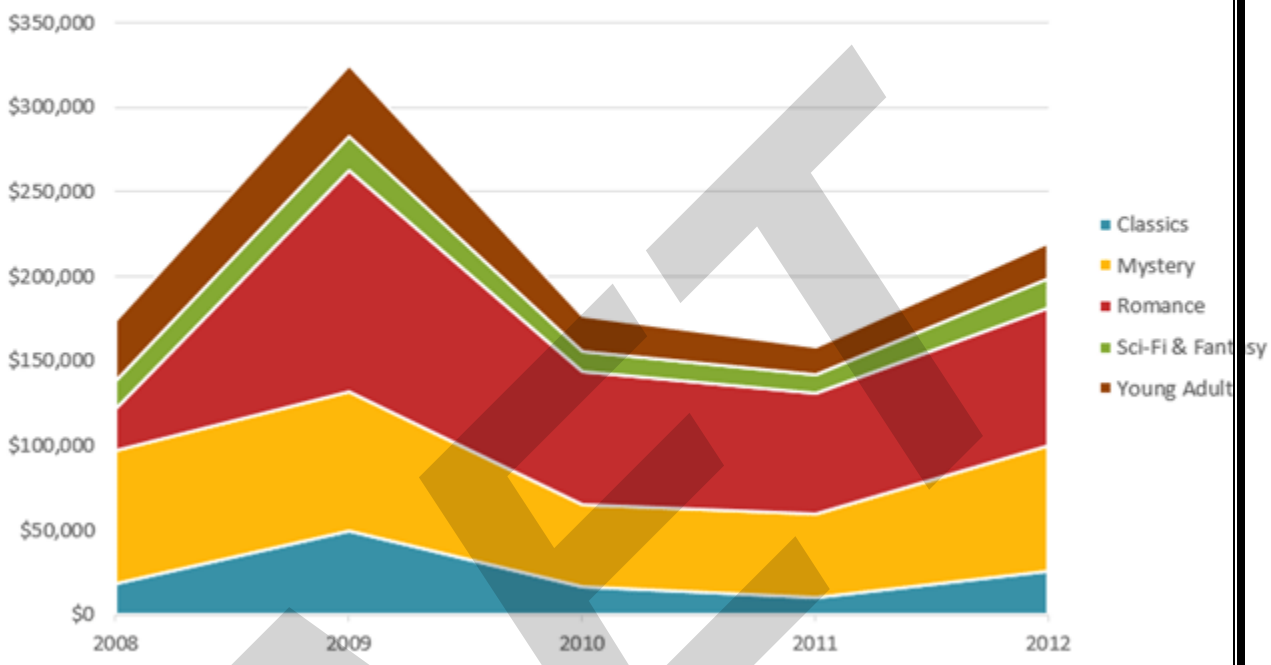
Pie


Classics, $18,580
Young Adult, $35,358
Sci-Fi & Fantasy, $16,730
Mystery, $78,970
Romance, $24,236
Classics
Mystery
Romance
Sci-Fi & Fantasy
Young Adult

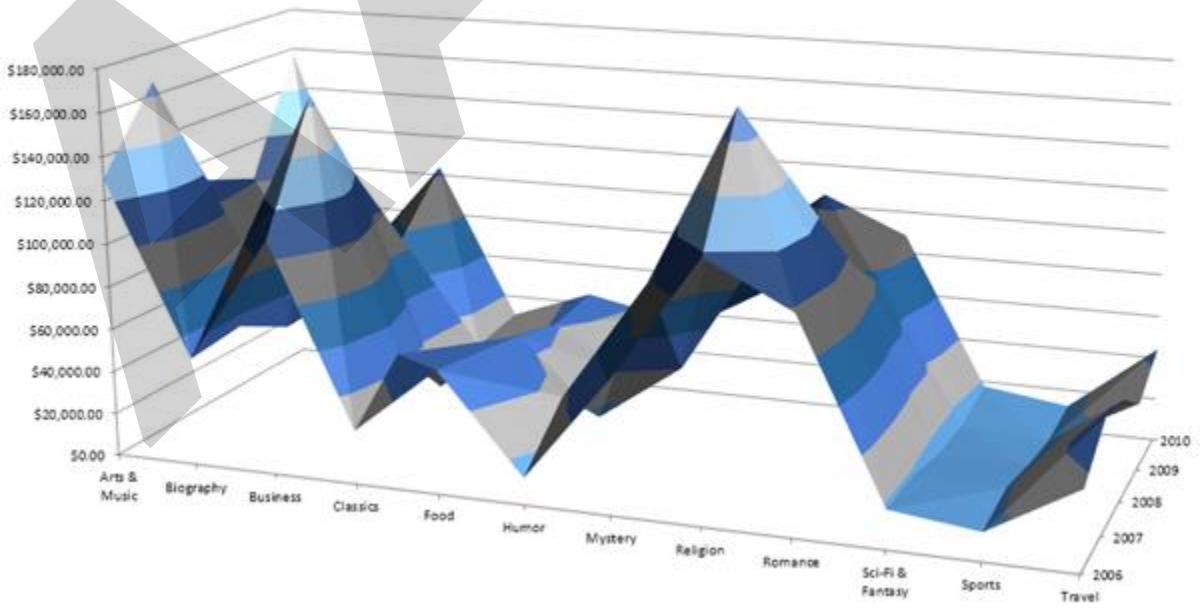
Bar

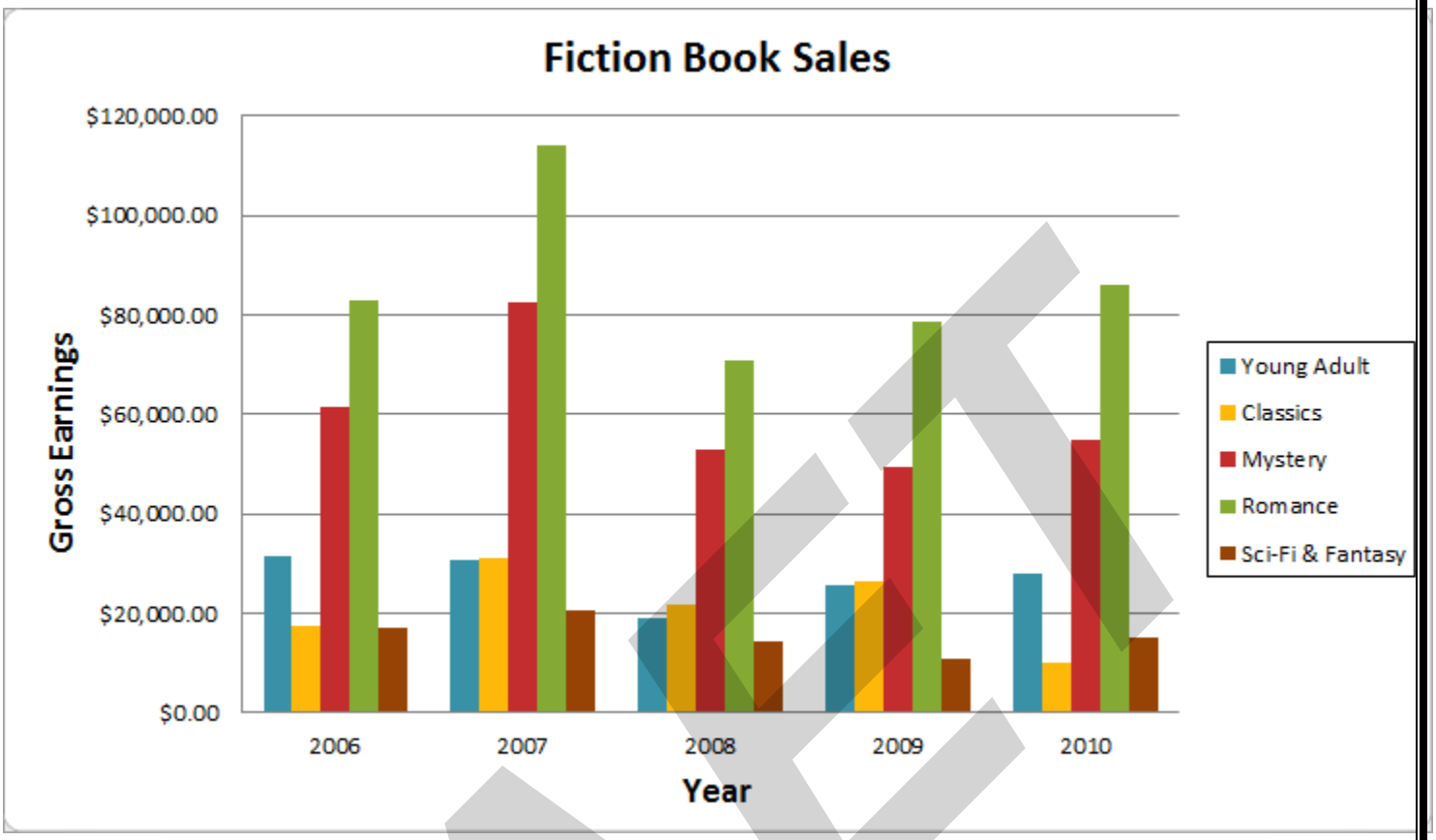

2012
2011
2010
2009
2008
$0
$20,000
$40,000
$60,000
$80,000
$100,000
$120,000
$140,000
Classics
Mystery
Romance
Sci-Fi & Fantasy
Young Adult

Area



Surface



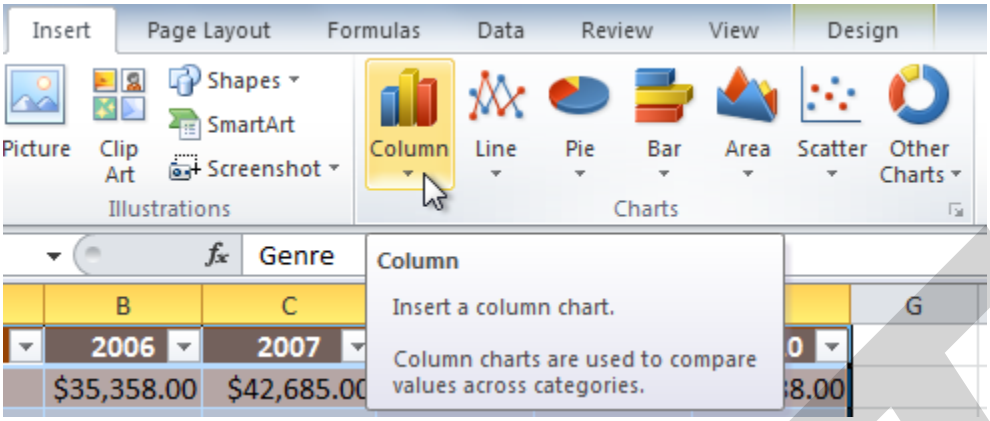


To create a chart:

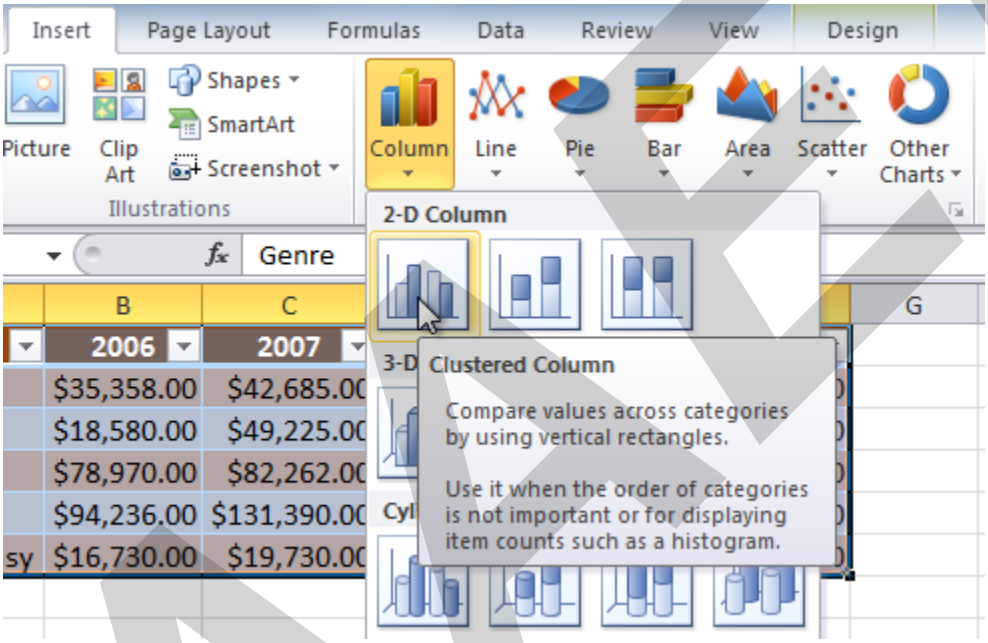
1. Select the **cells** you want to chart, including the **column titles** and **row labels**. These cells will be the **source data** for the chart.

	A	B	C	D	E	F
1	Genre	2006	2007	2008	2009	2010
2	Young Adult	$35,358.00	$42,685.00	$20,893.00	$16,065.00	$21,388.00
3	Classics	$18,580.00	$49,225.00	$16,326.00	$10,017.00	$26,134.00
4	Mystery	$78,970.00	$82,262.00	$48,640.00	$49,985.00	$73,428.00
5	Romance	$94,236.00	$131,390.00	$79,022.00	$71,009.00	$81,474.00
6	Sci-Fi & Fantasy	$16,730.00	$19,730.00	$12,109.00	$11,355.00	$17,686.00
7						

2. Click the **Insert** tab.
3. In the **Charts** group, select the desired **chart category** (**Column**, for example).



4. Select the desired **chart type** from the drop-down menu (**Clustered Column**, for example).



5. The chart will appear in the worksheet.

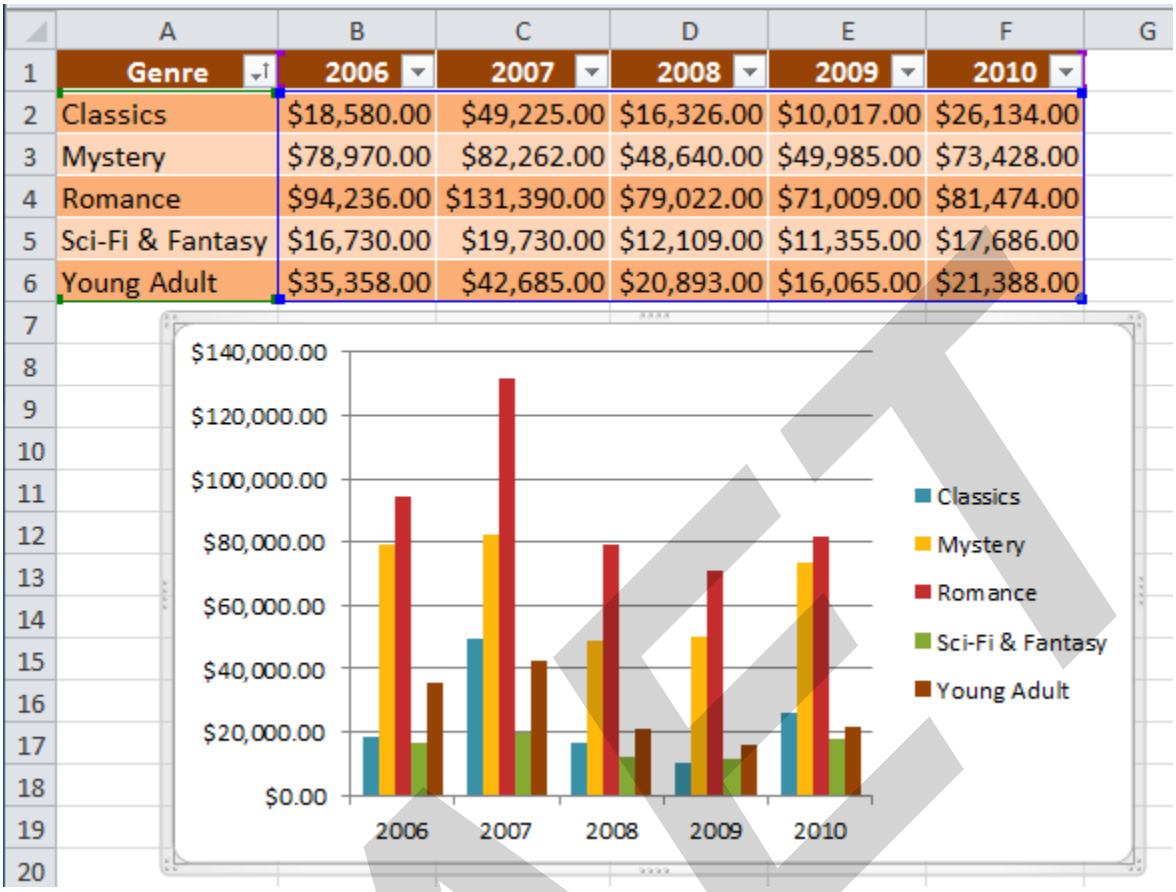
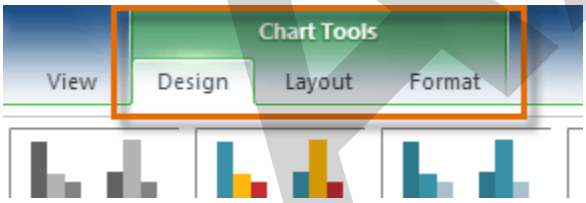


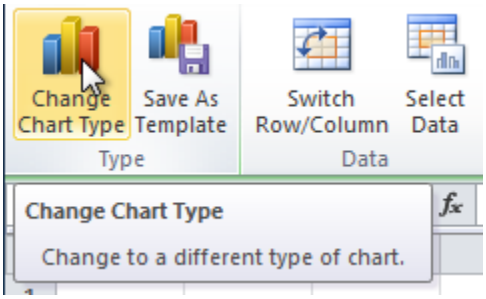
Chart tools

Once you insert a chart, a set of **chart tools** arranged into three tabs will appear on the Ribbon. These are only visible when the chart is selected. You can use these three tabs to **modify** your chart.

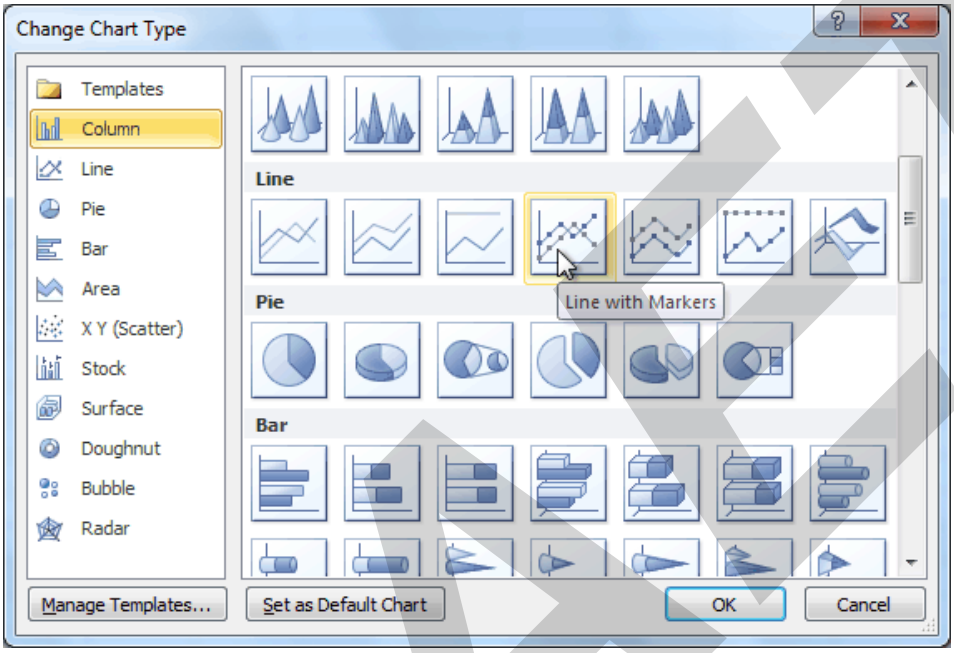


To change chart type:

1. From the **Design** tab, click the **Change Chart Type** command. A dialog box appears.

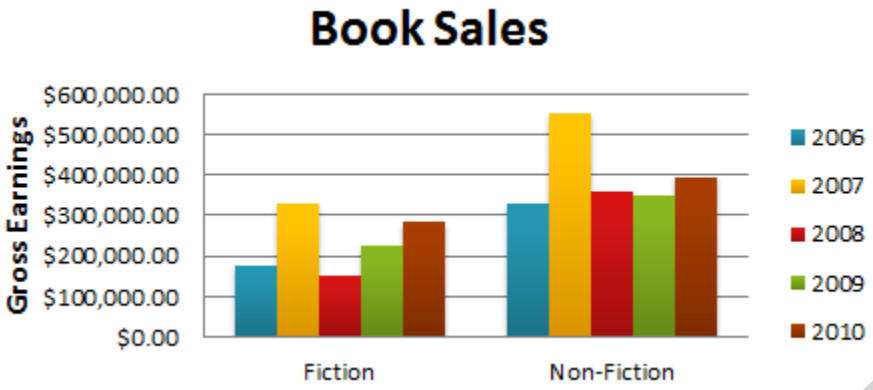


2. Select the desired **chart type**, then click **OK**.

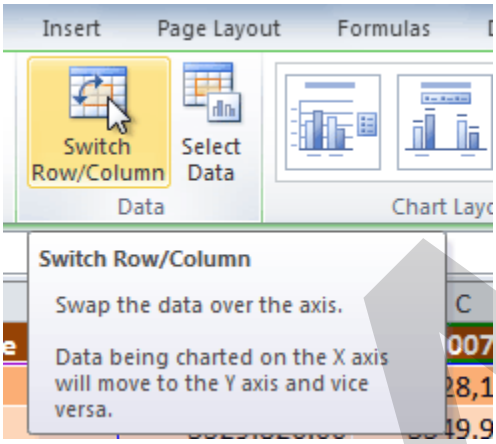


To switch row and column data:

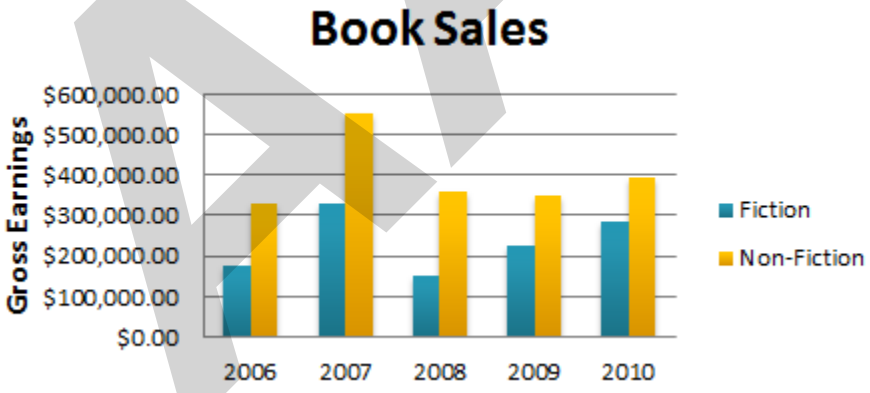
Sometimes when you create a chart, the data may not be grouped the way you want. In the **clustered column chart** below, the Book Sales statistics are grouped **by Fiction and Non-Fiction**, with a column for each year. However, you can also **switch the row and column data** so the chart will group the statistics **by year**, with columns for Fiction and Non-Fiction. In both cases, the chart contains the **same data**—it's just organized differently.



1. Select the **chart**.
2. From the **Design** tab, select the **Switch Row/Column** command.



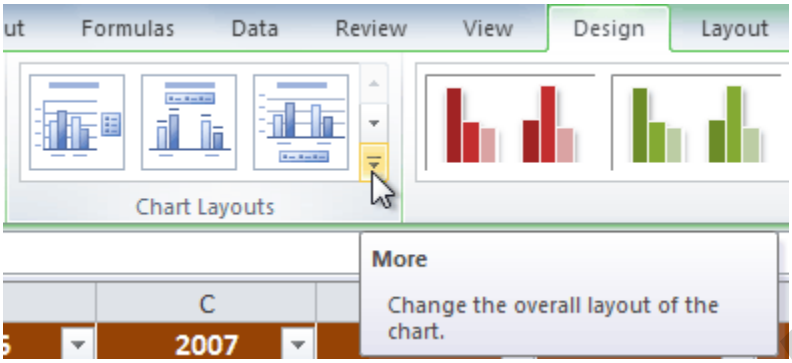
3. The chart will readjust.



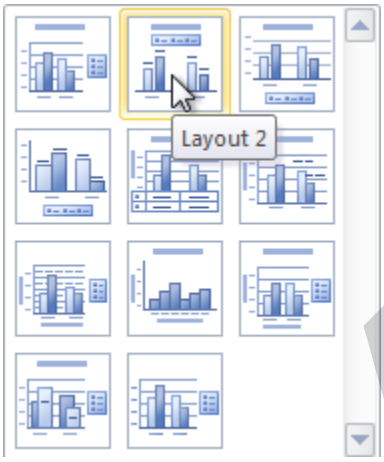
To change chart layout:

1. Select the **Design** tab.

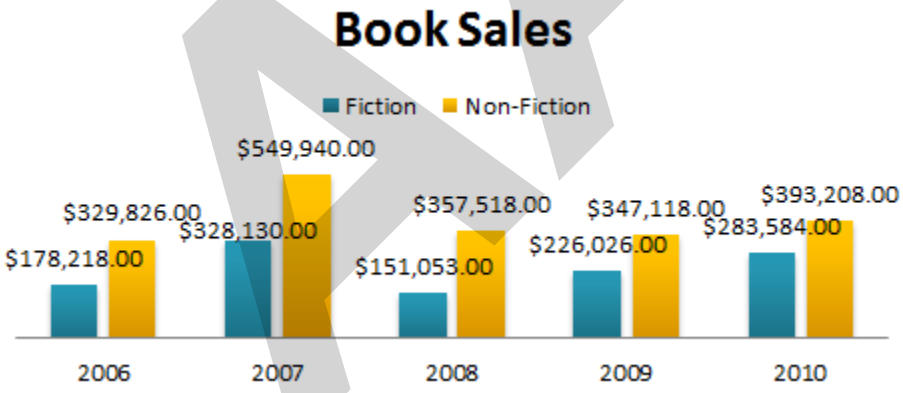
2. Click the **More** drop-down arrow in the **Chart Layouts** group to see all of the available layouts.



3. Select the desired layout.



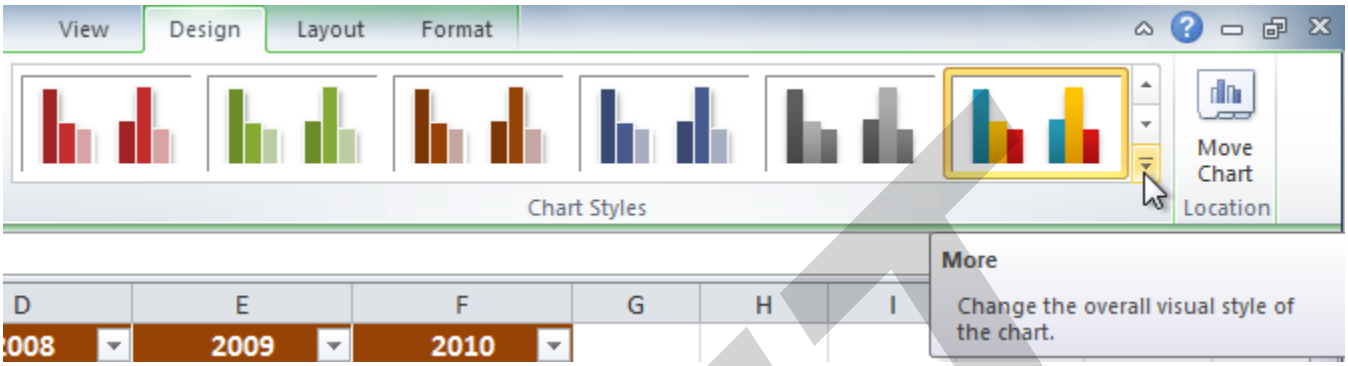
4. The chart will update to reflect the new layout.



Some layouts include **chart titles**, **axes**, or **legend labels**. To change them, place the **insertion point** in the text and begin typing.

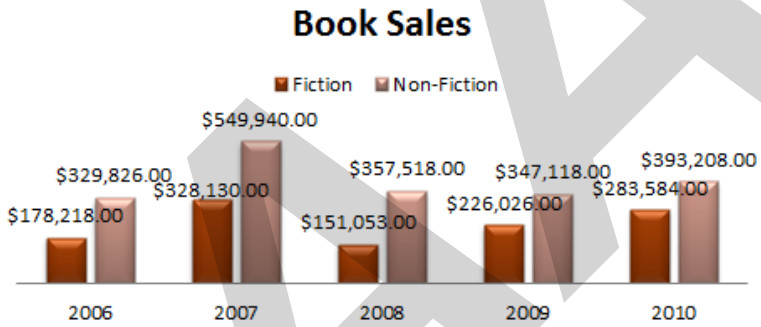
To change chart style:

1. Select the **Design** tab.
2. Click the **More** drop-down arrow in the **Chart Styles** group to see all of the available styles.



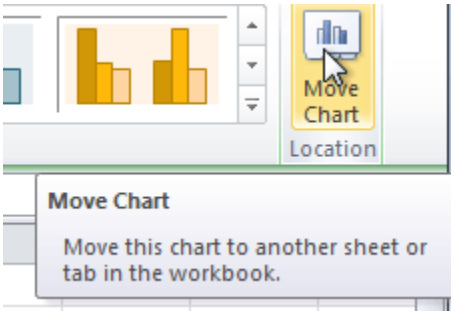
3. Select the desired style.

4. The chart will update to reflect the new style.

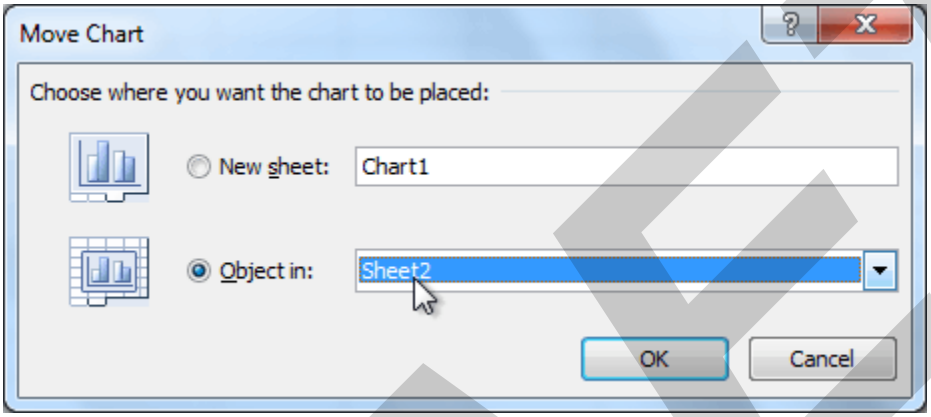


To move the chart to a different worksheet:

1. Select the **Design** tab.
2. Click the **Move Chart** command. A dialog box appears. The current location of the chart is selected.



3. Select the desired location for the chart (choose an existing worksheet, or select New Sheet and name it).

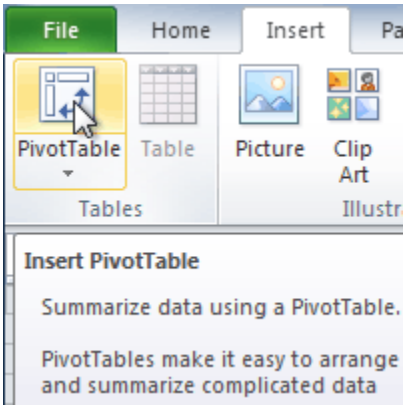


4. Click **OK**. The chart will appear in the new location.

Challenge!

1. Open an **existing Excel 2010 workbook**. If you want, you can use this **example**.
2. Use worksheet data to create a **chart**.
3. Change the **chart layout**.
4. Apply a **chart style**.
5. Move the chart to a **different worksheet**

Introduction



PivotTable reports—or **PivotTables**—make the data in your worksheets much more manageable by **summarizing** the data and allowing you to **manipulate** it in different ways. PivotTables can be an indispensable tool when used with large and complex spreadsheets, but they can be used with smaller spreadsheets as well.

In this lesson, you will learn the basics of **creating** and **manipulating** PivotTables.

Using a PivotTable

When you have a lot of data, it can sometimes be difficult to analyze it all. A PivotTable **summarizes** the data, making it easier to manage. Best of all, you can quickly and easily change the PivotTable to see the data in a different way, making it an extremely powerful tool.

Optional: You can download this **example** for extra practice.

Using a PivotTable to answer questions

The example below contains sales statistics for a fictional company. There is a **row** for each order, and it includes the **order amount**, name of the **salesperson** who made the sale, **month**, **sales region**, and customer **account number**.

Salesperson	Region	Account	Order Amount	Month
Albertson, Kathy	East	29386	$925.00	January
Albertson, Kathy	East	74830	$875.00	February
Albertson, Kathy	East	90099	$500.00	February
Albertson, Kathy	East	74830	$350.00	March
Brennan, Michael	West	82853	$400.00	January
Brennan, Michael	West	72949	$850.00	January
Brennan, Michael	West	90044	$1,500.00	January
Brennan, Michael	West	82853	$550.00	February
Brennan, Michael	West	72949	$400.00	March
Davis, William	South	55223	$235.00	February
Davis, William	South	10354	$850.00	January
Davis, William	South	50192	$600.00	March
Davis, William	South	27589	$250.00	January
Dumlao, Richard	West	67275	$400.00	January
Dumlao, Richard	West	41828	$965.00	February
Dumlao, Richard	West	87543	$125.00	March
Flores, Tia	South	97446	$1,500.00	March

Let's say we wanted to answer the question **What is the amount sold by each salesperson?** This could be time consuming because each salesperson appears on multiple rows, and we would need to add all of the order amounts for each salesperson. Of course, we could use the **Subtotal** feature to add them, but we would still have a lot of data to sift through.

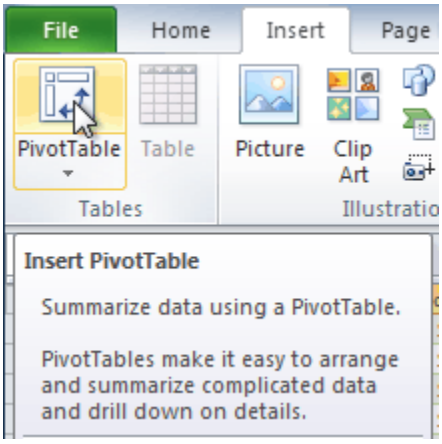
Luckily, a **PivotTable** can instantly do all of the math for us and summarize the data in a way that's not only easy to read but also easy to manipulate. When we're done, the PivotTable will look something like this:

Row Labels	Sum of Order Amount
Albertson, Kathy	$2,650.00
Brennan, Michael	$3,700.00
Davis, William	$1,935.00
Dumlao, Richard	$1,490.00
Flores, Tia	$4,565.00
Post, Melissa	$1,690.00
Thompson, Shannon	$3,160.00
Walters, Chris	$4,375.00
Grand Total	**$23,565.00**

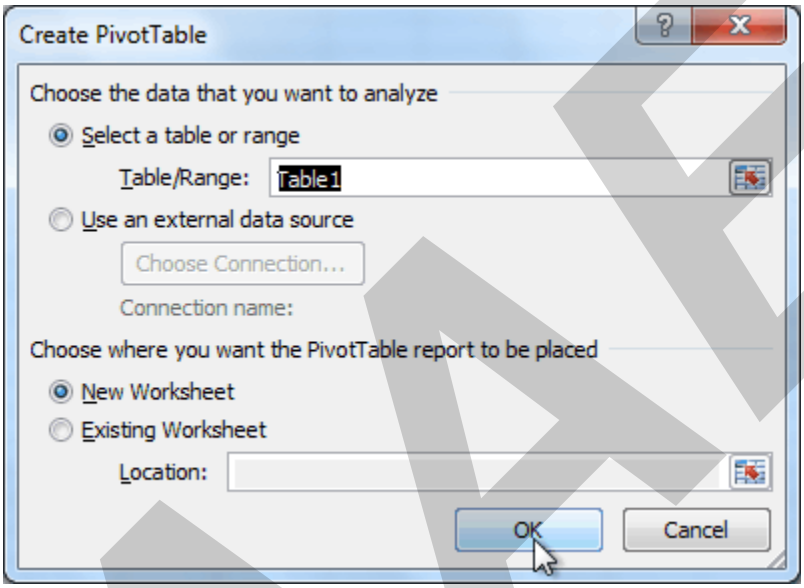
As you can see, the PivotTable is much easier to read. It only takes a **few steps** to create one, and once you create it you'll be able to take advantage of its powerful features.

To create a PivotTable:

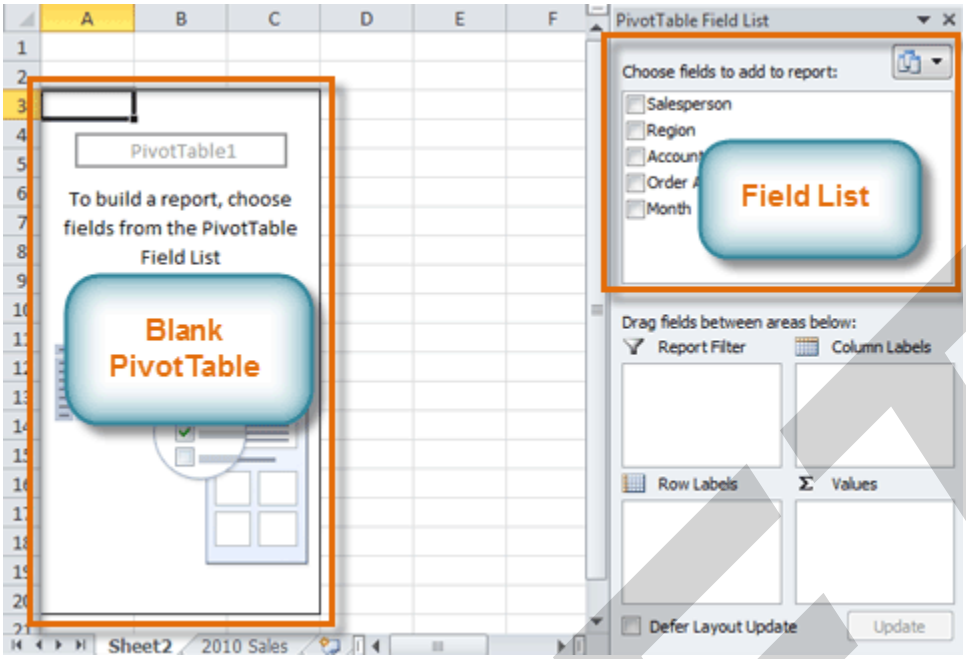
1. Select the **table** or **cells**—including column headers—containing the data you want to use.
2. From the **Insert** tab, click the **PivotTable** command.



3. The **Create PivotTable** dialog box will appear. Make sure the settings are correct, then click **OK**.



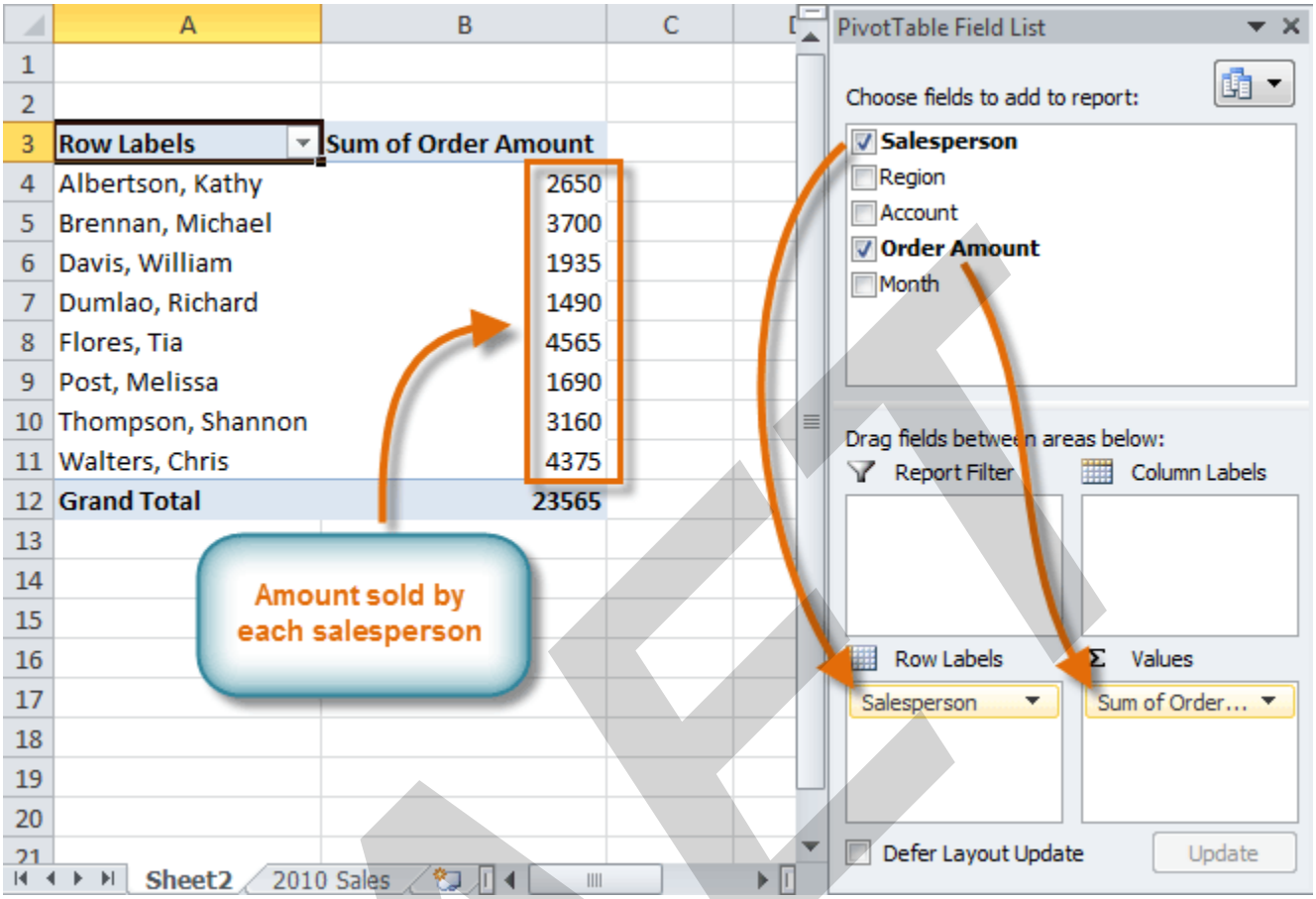
4. A blank **PivotTable** will appear on the left, and the **Field List** will appear on the right.



To add fields to the PivotTable:

You'll need to decide which **fields** to add to the PivotTable. Each field is a **column header** from the source data. It may be helpful to recall the **question** you are trying to answer. In this example, we want to know the total **amount**sold by each **salesperson**, so we'll need the **Order Amount** and **Salesperson** fields.

1. In the **Field List**, place a check mark next to each field you want to add.
2. The selected fields will be added to one of the four **areas** below the Field List. In this example, the **Salesperson** field is added to the **Row Labels** area, and the **Order Amount** is added to the **Values** area. If a field is not in the desired area, you can drag it to a different one.
3. The PivotTable now shows the **amount sold** by each **salesperson**.



Just like with normal spreadsheet data, you can sort the data in a PivotTable using the **Sort & Filter**command on the **Home** tab. You can also apply any type of formatting you want. For example, you may want to change the number format to **Currency**. However, be aware that some types of formatting may disappear when you modify the PivotTable.

If you change any of the data in your source worksheet, the PivotTable **will not update automatically**. To manually update it, select the PivotTable and then go to **Options → Refresh**.

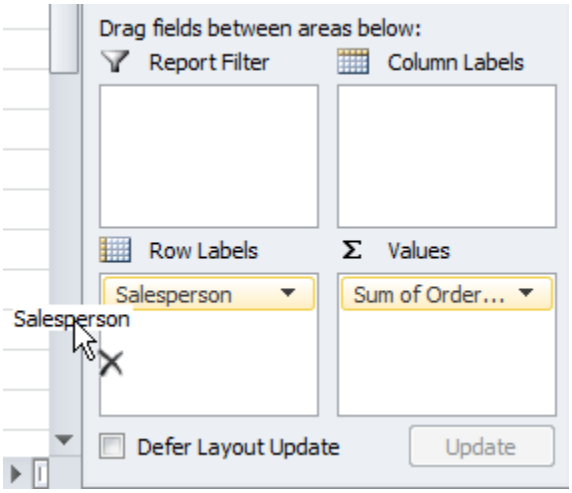
Pivoting data

One of the best things about a PivotTable is that it lets you **pivot** the data in order to look at it in a different way. This allows you to answer **multiple questions** and even **experiment** with the data to learn new things about it.

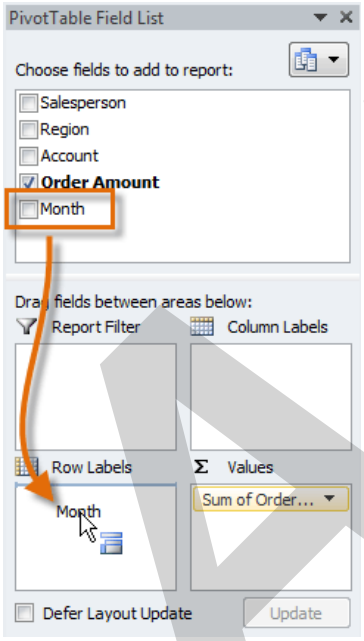
In our example, we used the PivotTable to answer the question **What is the total amount sold by each salesperson?** Now we'd like to answer a new question, **What is the total amount sold in each month**? We can do this by changing the **row labels**.

To change row labels:

1. Drag any existing **fields** out of the **Row Labels** area, and they will disappear.



2. Drag a new field from the **PivotTable Field List** into the **Row Labels** area. In this example, we'll use the **Month** field.



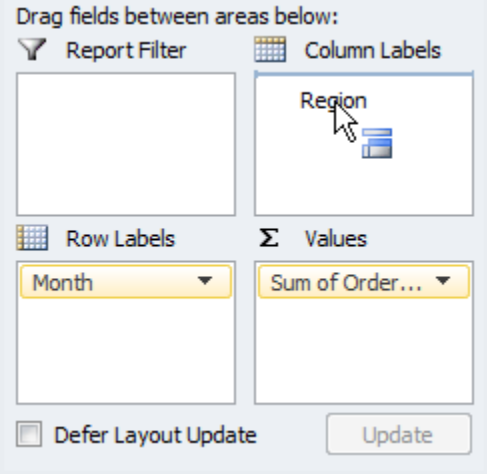
3. The PivotTable will adjust to show the new data. In this example, it now shows us the total **Order Amount** for each **month**.

Row Labels	Sum of Order Amount
January	$9,090.00
February	$9,160.00
March	$5,315.00
Grand Total	**$23,565.00**

To add column labels:

So far, our PivotTable has only shown **one column** of data at a time. To show **multiple columns**, we'll need to add **column labels**.

1. Drag a field from the **PivotTable Field List** into the **Column Labels** area. In this example, we'll use the **Region** field.



2. The PivotTable will now have multiple columns. In this example, there is a column for each **region**.

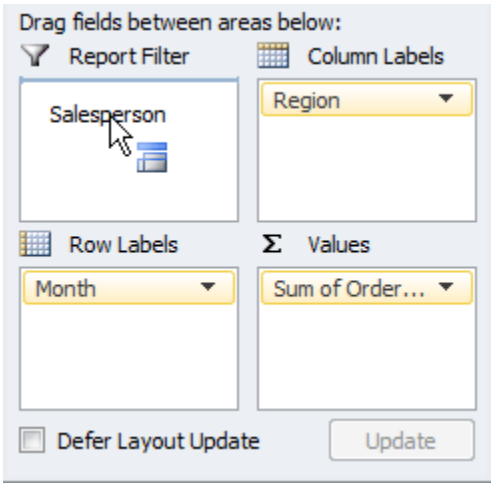
Sum of Order Amount	Column Labels				
Row Labels	East	North	South	West	Grand Total
January	$1,690.00	$1,140.00	$3,110.00	$3,150.00	$9,090.00
February	$1,950.00	$1,720.00	$3,975.00	$1,515.00	$9,160.00
March	$700.00	$300.00	$3,790.00	$525.00	$5,315.00
Grand Total	**$4,340.00**	**$3,160.00**	**$10,875.00**	**$5,190.00**	**$23,565.00**

Using report filters

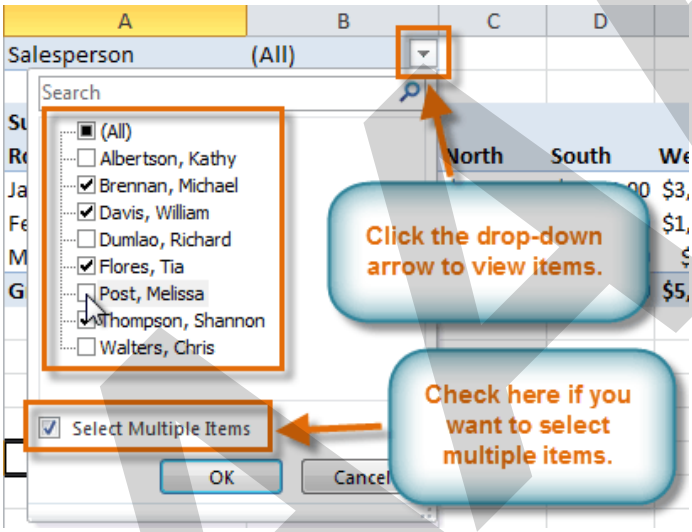
Sometimes you may want focus on a portion of the data and **filter out** everything else. In our example, we'll focus on certain salespeople to see how they affect the total sales.

To add a report filter:

1. Drag a field from the **Field List** into the **Report Filter** area. In this example, we'll use the **Salesperson** field.



2. The report filter appears above the PivotTable. Click the **drop-down arrow** on the right side of the filter to view the list of items.
3. Select the item you want to view. If you want to select more than one item, place a check mark next to **Select Multiple Items**, then click **OK**. In the example below, we are selecting four salespeople.



4. Click **OK**. The PivotTable will adjust to reflect the changes.

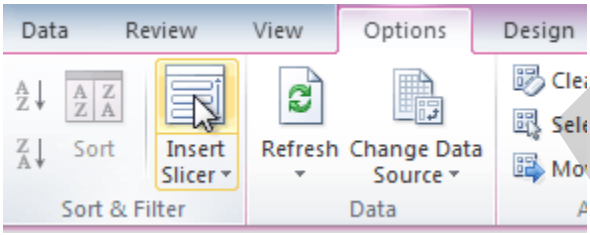
Salesperson	(Multiple Items)				
Sum of Order Amount	Column Labels				
Row Labels	East	North	South	West	Grand Total
January	$765.00	$1,140.00	$2,755.00	$2,750.00	$7,410.00
February	$575.00	$1,720.00	$1,220.00	$550.00	$4,065.00
March	$350.00	$300.00	$2,525.00	$400.00	$3,575.00
Grand Total	**$1,690.00**	**$3,160.00**	**$6,500.00**	**$3,700.00**	**$15,050.00**

Slicers

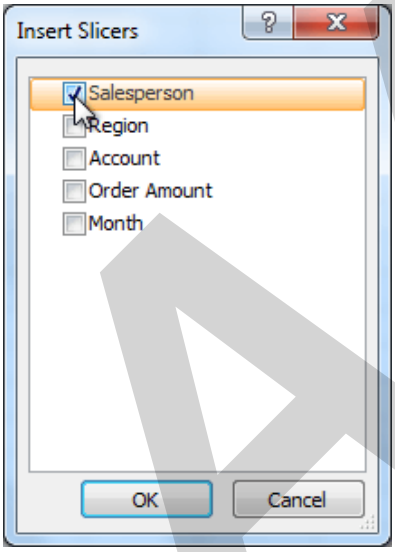
Slicers were introduced in Excel 2010 to make filtering data **easier** and **more interactive**. They're basically just **report filters**, but they're more interactive and faster to use because they let you quickly select items and **instantly see the result**. If you filter your PivotTables a lot, you might want to use slicers instead of report filters.

To add a slicer:

1. Select any cell in your PivotTable. The **Options** tab will appear on the **Ribbon**.
2. From the **Options** tab, click the **Insert Slicer** command. A dialog box will appear.



3. Select the desired field. In this example, we'll select **Salesperson**. Then click **OK**.



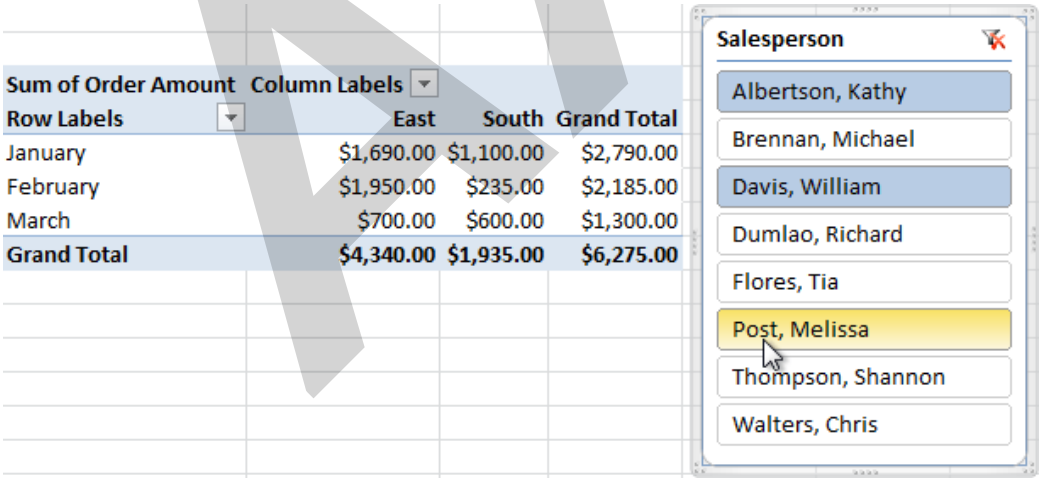
4. The slicer will appear next to the PivotTable. Each item selected will be highlighted in **blue**. In the example below, the slicer contains a list of the different salespeople, and **four** of them are currently selected.

Sum of Order Amount	Column Labels		
Row Labels	South	West	Grand Total
January	$2,010.00	$3,150.00	$5,160.00
February	$3,740.00	$1,515.00	$5,255.00
March	$3,190.00	$525.00	$3,715.00
Grand Total	**$8,940.00**	**$5,190.00**	**$14,130.00**

Using the slicer:

Just like with **report filters**, only the **selected** items are used in the PivotTable. When you **select** or **deselect** items, the PivotTable will instantly reflect the changes. Try selecting different items to see how they affect the PivotTable.

- To select a single item, click it.
- To select multiple items, hold down the **Control (Ctrl)** key on your keyboard, then click each item you want.
- You can also select multiple items by clicking and dragging the mouse. This is useful if the desired items are **adjacent** to one another, or if you want to **select all of the items**.
- To deselect an item, hold down the **Control (Ctrl)** key on your keyboard, then click the item.



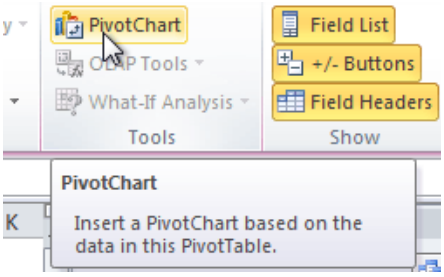
Sum of Order Amount	Column Labels		
Row Labels	East	South	Grand Total
January	$1,690.00	$1,100.00	$2,790.00
February	$1,950.00	$235.00	$2,185.00
March	$700.00	$600.00	$1,300.00
Grand Total	**$4,340.00**	**$1,935.00**	**$6,275.00**

Using a PivotChart

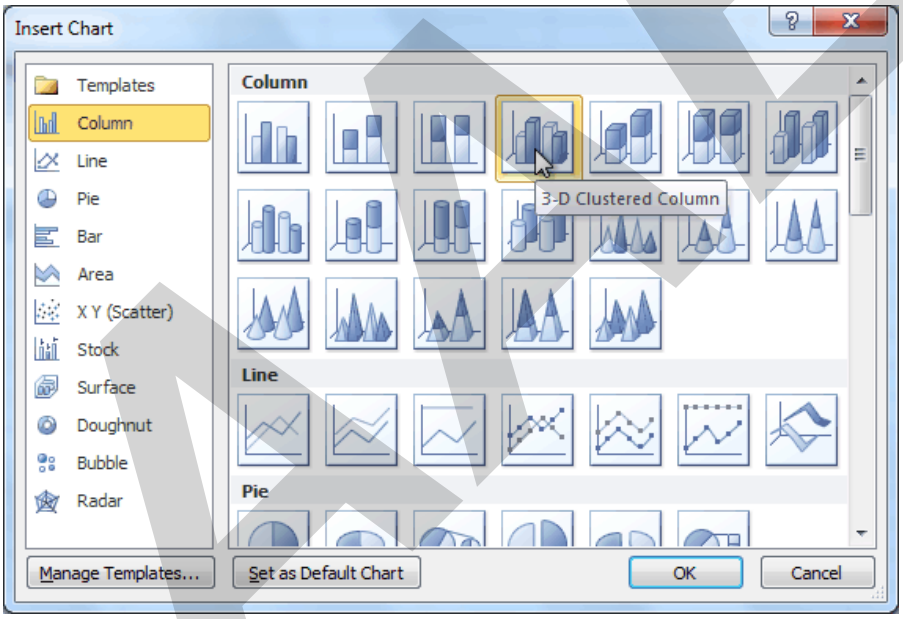
A **PivotChart** is like a regular chart, except it displays data from a **PivotTable**. As with a regular chart, you'll be able to select a **chart type**, **layout**, and **style** to best represent the data. In this example, we'll use a PivotChart so we can visualize the **trends** in each sales region.

To create a PivotChart:

1. Select any cell in your PivotTable. The **Options** tab will appear on the **Ribbon**.
2. From the **Options** tab, click the **PivotChart** command.

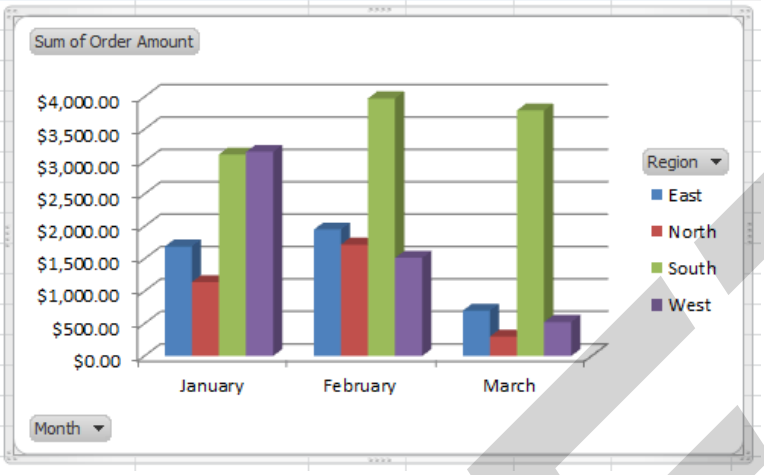


3. From the **dialog box**, select the desired **chart type** (**3-D Clustered Column**, for example), then click **OK**.



4. The PivotChart will appear in the worksheet. If you want, you can move it by clicking and dragging.

Sum of Order Amount	Column Labels				
Row Labels	East	North	South	West	Grand Total
January	$1,690.00	$1,140.00	$3,110.00	$3,150.00	$9,090.00
February	$1,950.00	$1,720.00	$3,975.00	$1,515.00	$9,160.00
March	$700.00	$300.00	$3,790.00	$525.00	$5,315.00
Grand Total	**$4,340.00**	**$3,160.00**	**$10,875.00**	**$5,190.00**	**$23,565.00**



If you make any changes to the PivotTable, the PivotChart will adjust automatically.

Challenge!

1. Open an **existing Excel 2010 workbook**. If you want, you can use this **example**.
2. Create a **PivotTable** using the data in the workbook.
3. Experiment with different **row labels** and **column labels.**
4. Filter the report with a **slicer**.
5. Create a **PivotChart**.
6. If you are using the **example**, use the PivotTable to answer the question, **Which salesperson sold the lowest amount in January? Hint:** First decide which **fields** you need in order to answer the question.

Merging copies of a shared workbook

Turning on the Track Changes feature automatically shares your workbook. When multiple users collaborate on the same shared workbook, you can use the **Compare and Merge Workbooks** command to view all of their changes at once and address them by accepting or rejecting them.

Each person you collaborate with must save a copy of the shared workbook using a unique file name that differs from the original. For example, if the original file name

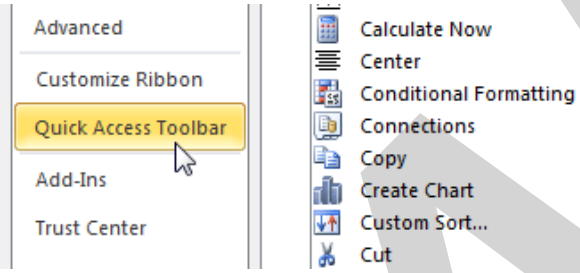
is **Agenda**, your collaborators could use the files names **Agenda—Ana's Changes** or **David Agenda Feedback**.

You can only merge copies of the same shared workbook. All of the copies you plan to merge should be located in the same folder.

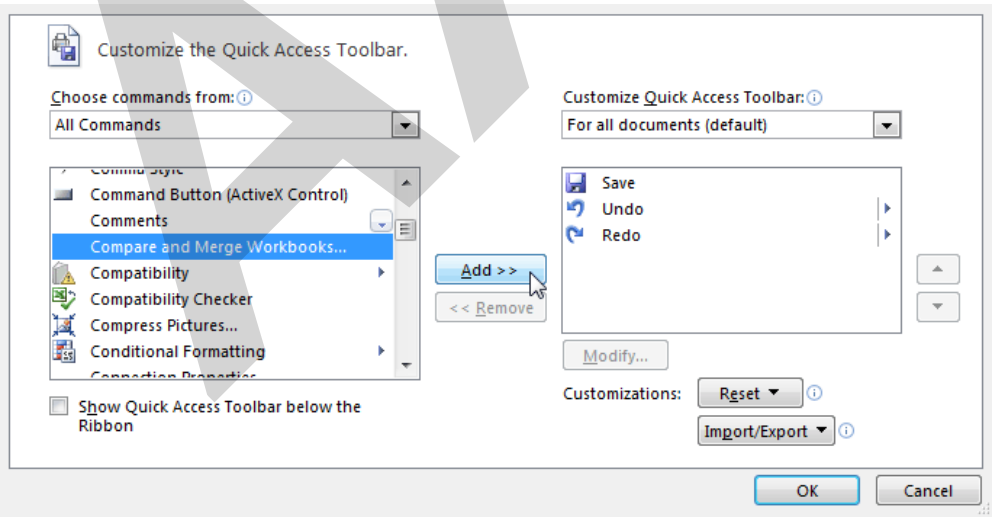
To add the Compare and Merge Workbooks command:

The **Compare and Merge Workbooks** command is not available on the Review tab but can be added to the **Quick Access toolbar**. Start here if you have not already added the command.

1. Click the **File** tab.
2. Choose **Options**.
3. The Excel Options dialog box will appear. Select **Quick Access toolbar**.



4. Under **Choose commands from**, click the drop-down menu and select **All Commands**.
5. Find and select the **Compare and Merge Workbooks** command.
6. Click **Add** to add it to the Quick Access toolbar.



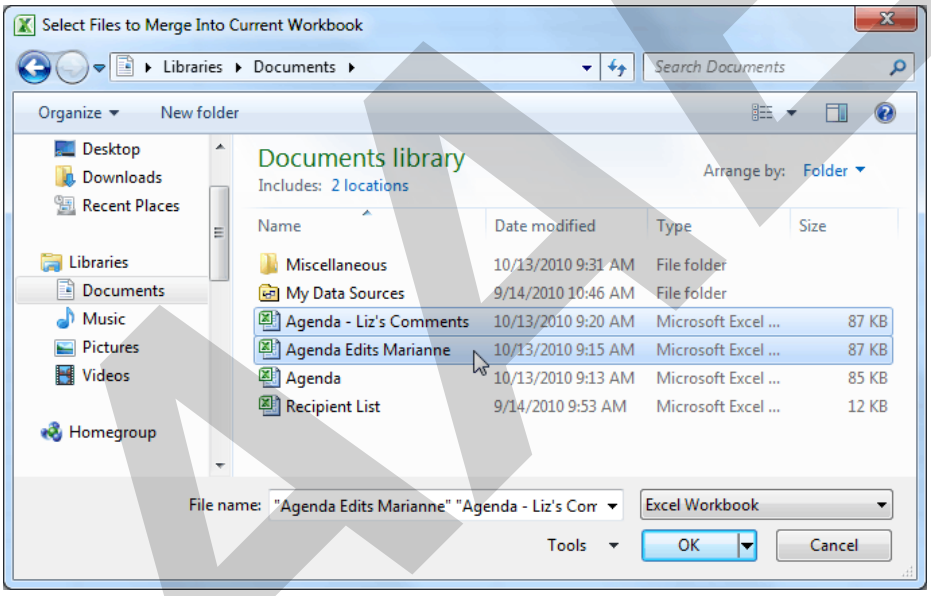
7. Click **OK**.

8. The **Compare and Merge Workbooks** command will be added to the Quick Access toolbar.

To compare and merge workbooks:

1. Open a copy of the shared workbook.
2. Click the **Compare and Merge Workbooks** command on the **Quick Access toolbar**.

3. If prompted, allow Excel to save your workbook.
4. The **Select Files to Merge into Current Workbook** dialog box will appear.
5. **Select** another copy of the same shared workbook you want to merge. To select multiple copies, hold **CTRL**or **SHIFT** on your keyboard while clicking the file names.



6. Click **OK**.
7. The changes from each copy of the shared workbook will be merged into a single copy. All changes and comments can now be addressed at the same time.

6	Start	End	Time	Item	Facilitator
7	8:00 AM	9:00 AM	1:00	Breakfast, welcome	Exec team
8	9:00 AM	9:30 AM	0:30	Introduction	Garth
9	9:30 AM	10:30 AM	1:00	Work relationships exercise	Garth, Dean, Liz
10	10:30 AM	10:45 AM	0:15	Break	
11	10:45 AM	12:45 PM	2:00	Cady Falls hike (strategy game)	Marianne, Liz
12	12:45 PM	1:45 PM	1:00	Lunch (with strategy game team)	
13	1:45 PM	2:15 PM	0:30	Strategy debrief	Marianne
14	2:15 PM	3:15 PM	1:00	Get to know your team	Liz
15	3:15 PM	4:00 PM	0:45	Team building exercise	Rick
16	4:00 PM	4:15 PM	0:15	Break	
17	4:15 PM	4:45 PM	0:30	Walk in the redwoods	Dean
18	4:45 PM	6:00 PM	1:15	Strengths exercise	Garth, exec team
19	6:00 PM	8:00 PM	2:00	Dinner	

Each **color** represents changes from a different user, so you can tell at a glance who made the change.