

Intermediate Excel

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Tech Center Help Desk:

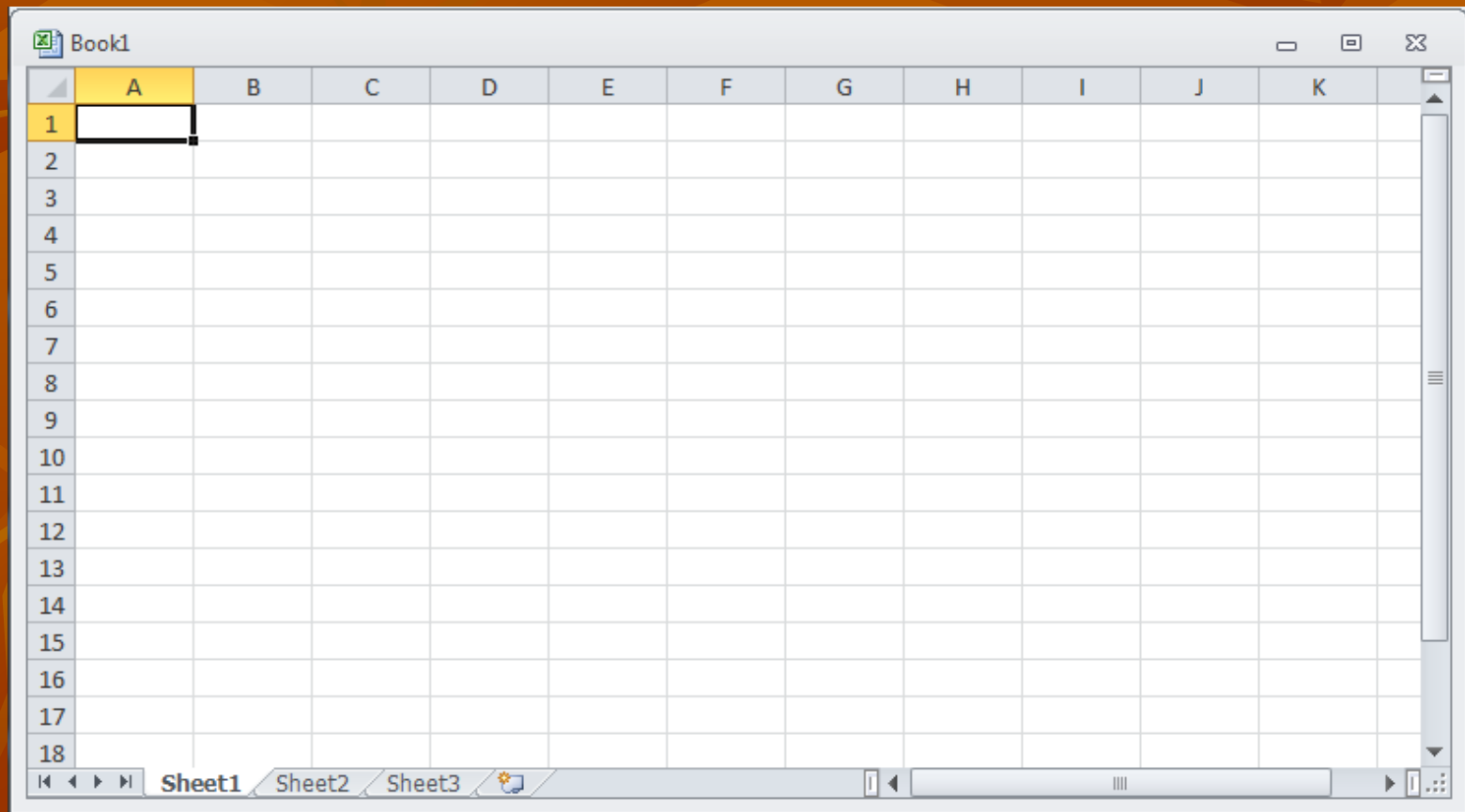
Sunday 2-6, Monday 10-2, Tuesday 4-8

Agenda

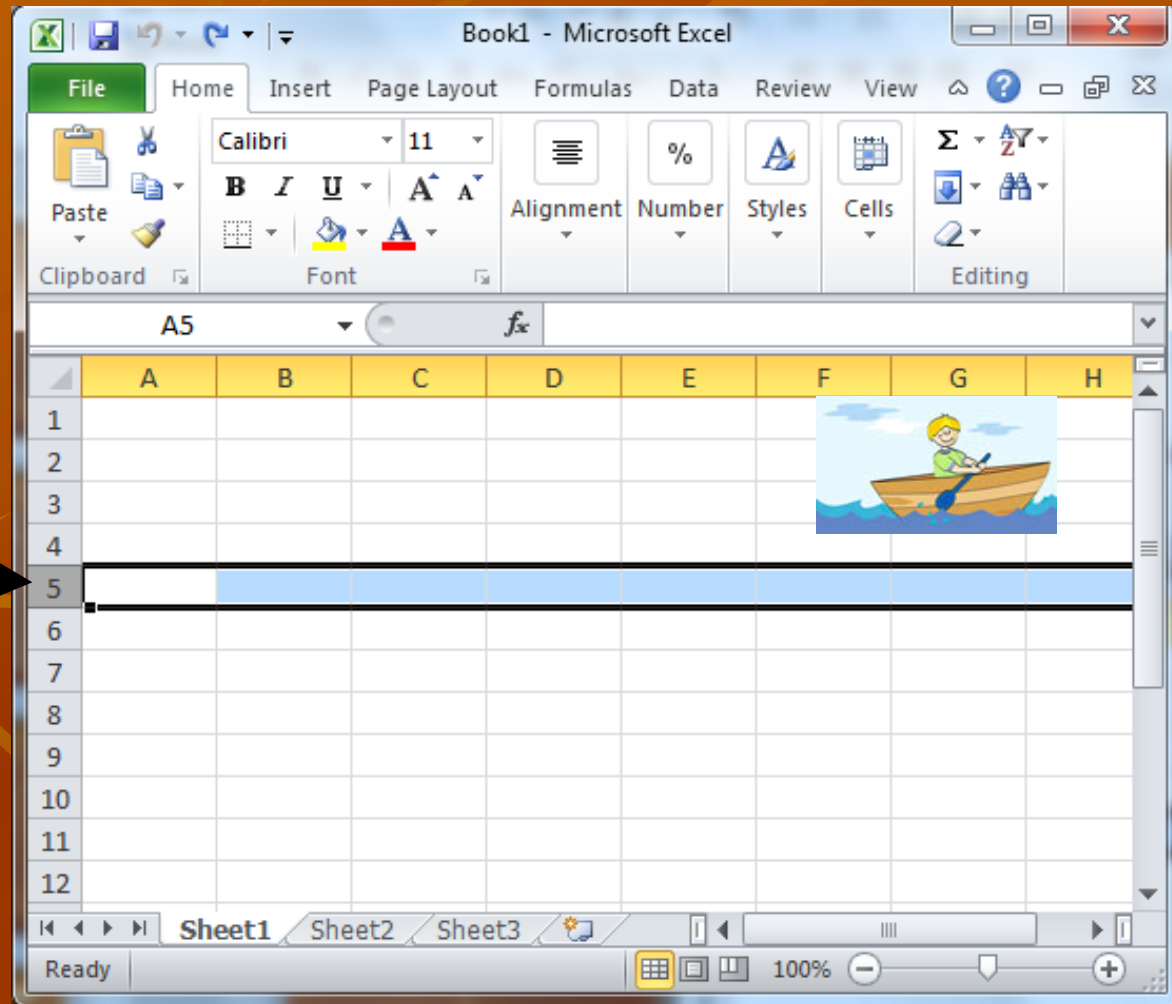
- Excel basics review
- Cell formatting
- Insert column & formula
- Charts
- Conditional Formatting
- Data Analysis: Sorting and Filters

The Sheet Window

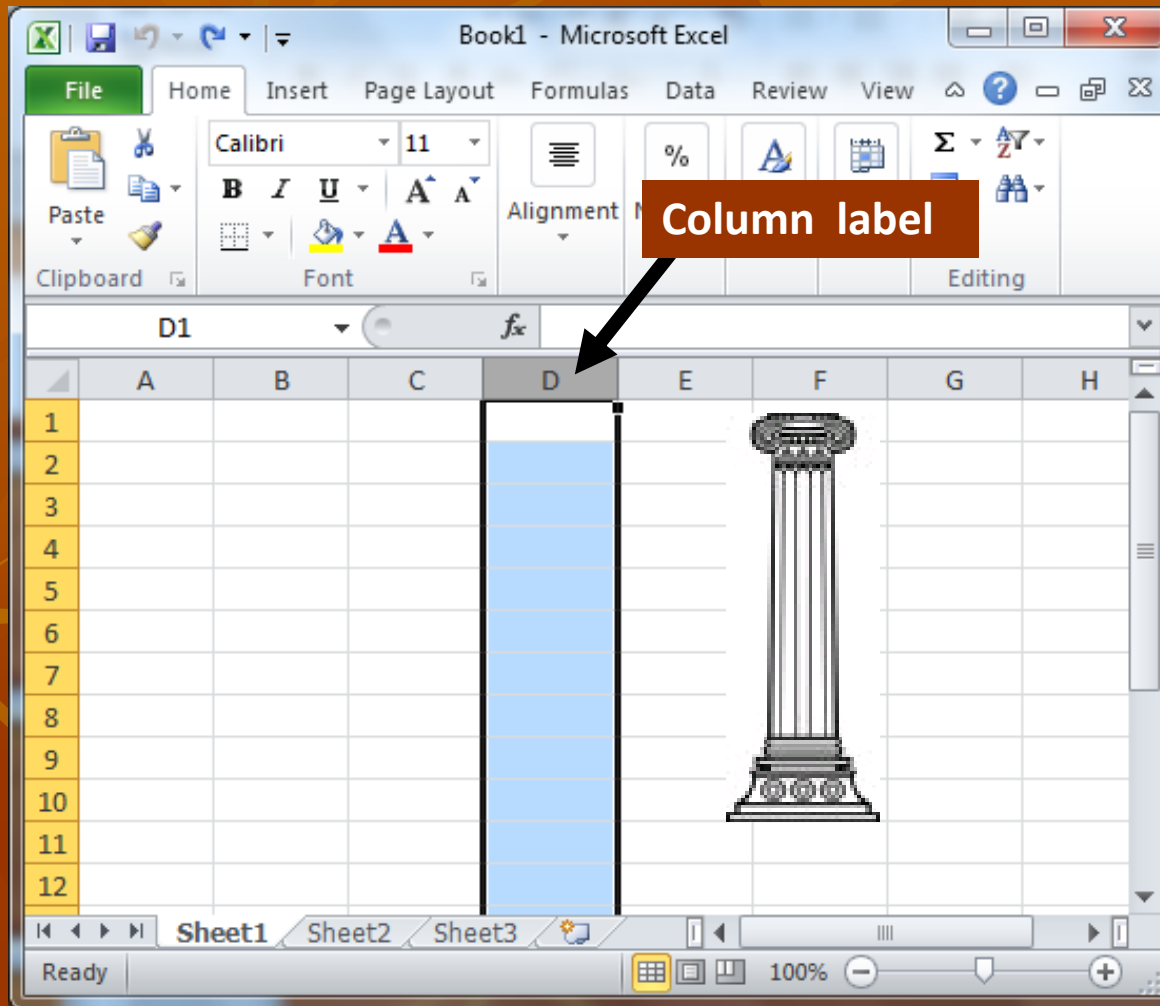
Each file can contain multiple sheets, which can be renamed



Row

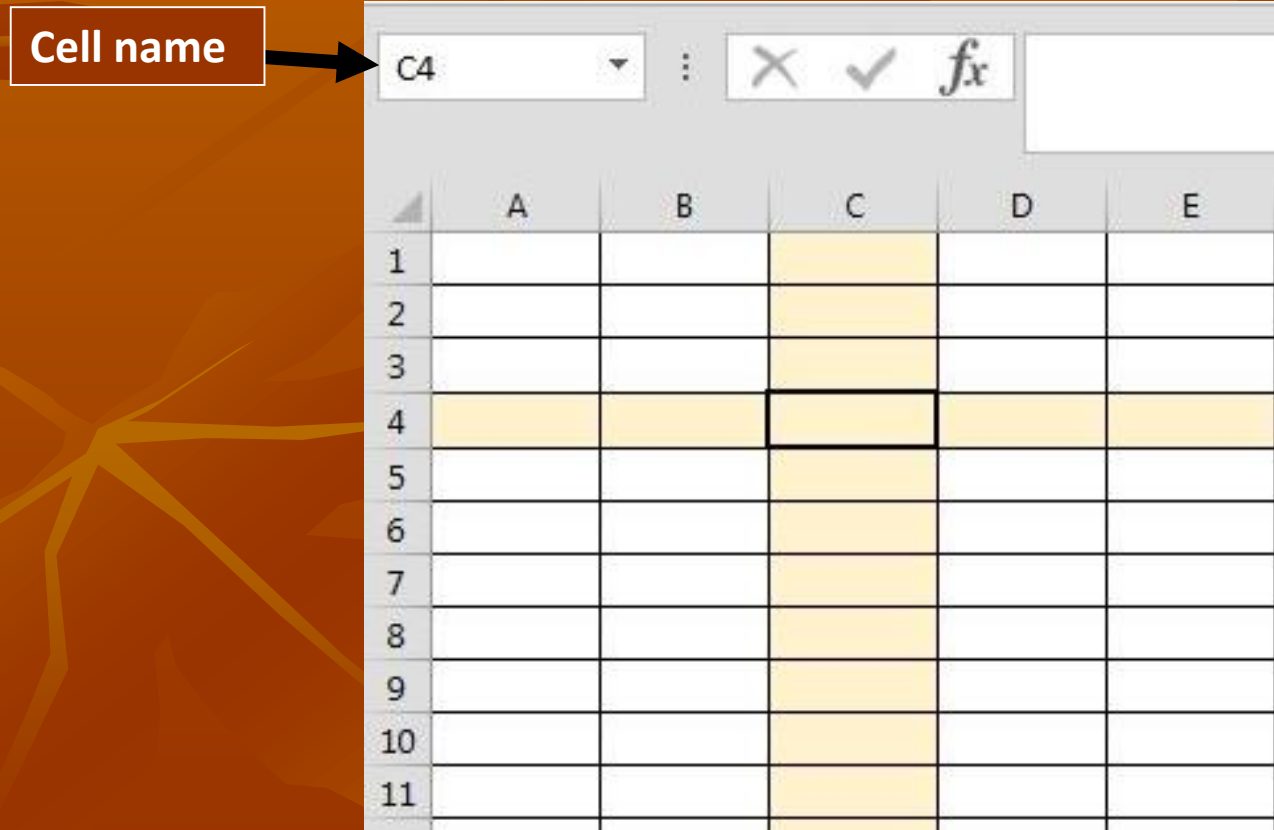


Column



Active or Selected Cell

= the cell where the **cursor** (cell-sized rectangle) is positioned:



Forms of the Mouse Pointer

- **White arrow** – select ribbon tab or button; use scroll bars
- **Double-headed arrow** – click & drag window edge
- **Vertical bar** – type something (will be entered after the blinking vertical bar cursor)
- **“Fat Plus”** – click to select a cell; or click & drag to select multiple cells
- **“Skinny Plus”** – click & drag Fill Handle to use fill feature
- **4-Way Arrow** – click & drag cell contents to a new location
- **Small black arrow** – Select row or column by clicking on label
- **Double-headed arrow with perpendicular line:** click & drag or double-click to change column or row size

Positioning the Cursor

- Click on a cell to position the cursor there & enter or edit cell contents
- Select multiple cells: click & drag
- Select row or column: click on **label**
- Use the keyboard instead of the mouse
 - **Move the cursor:** Arrow keys, Enter, Tab & Shift-tab
 - **Select multiple cells:** hold down shift & use arrow key
 - **Delete key** deletes the contents of the selected cell(s)

Adjusting the Sheet

- Change **column width**: click & drag the thin black line to the right of the column label
- Change **row height**: click & drag the thin black line below the row label
- Change **size of view** (printing not affected) with zoom bar at lower right of window
- **Delete cell contents of a row or column**: click on label to select row or column, click Delete key
- **Delete or Insert cells, rows or columns**: Home tab, Cells group

Data Entry

- Text (=labels)
- Number (=constant number, not formula)
- Formulas & Functions (mathematical equations)
- **To “finalize” the data entry:** Enter or Tab key, or click in another cell

Formulas & Functions

- Always starts with =
- **Formula**
 - Can simply reference other cells: =B3, =C4
 - Calculates cell contents with an equation: =B3+B4
- **Function:** an equation identified by name (Sum, Average, etc.) =SUM(B3:B15)
 - a colon (:) indicates the range of cells to apply the formula to
- After typing, **finalize data entry** to see result in cell, formula or function in Formula Bar

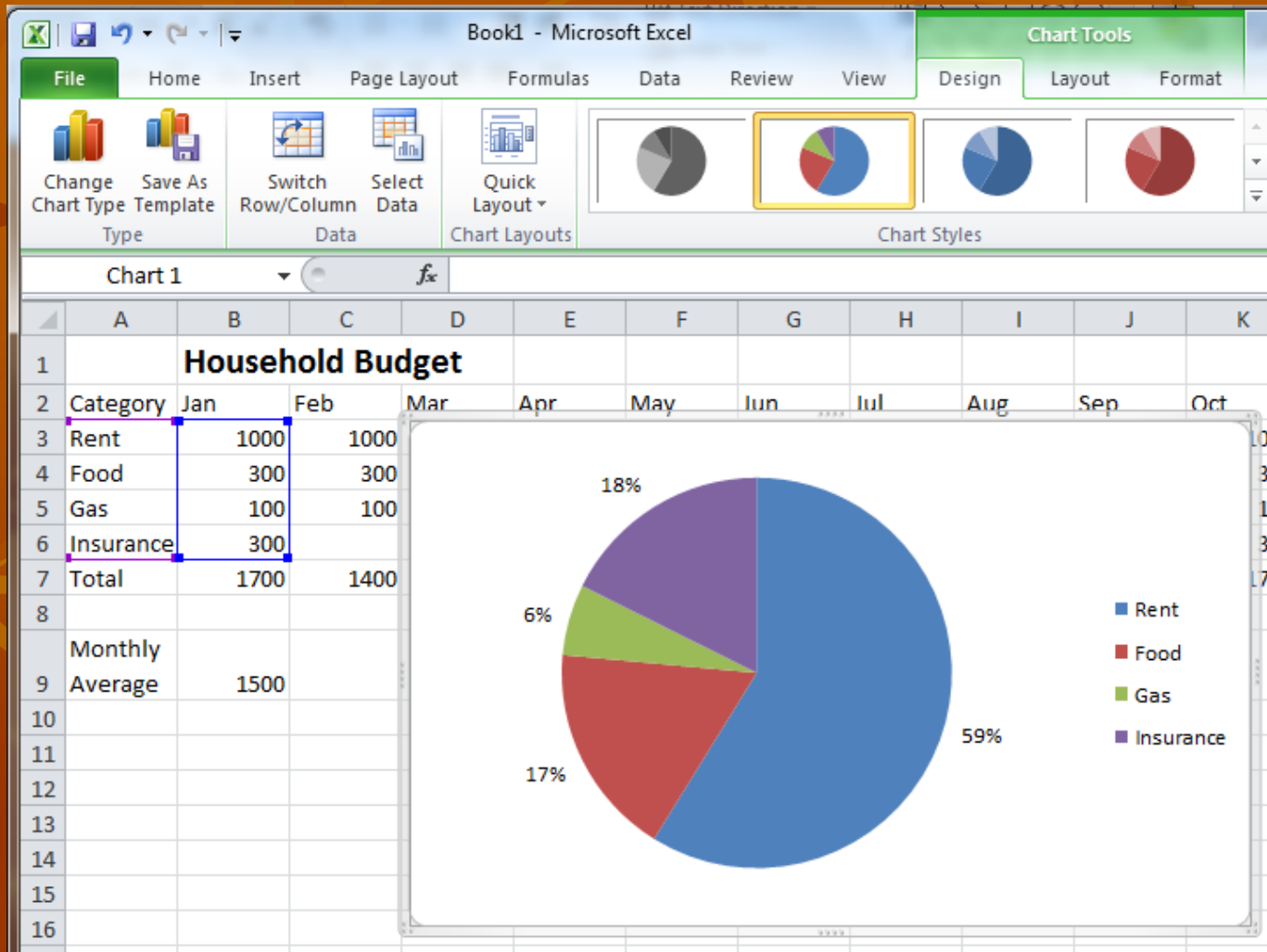
Charts (plot or graph of data)

(Use Household Budget file)

Add a Pie chart of monthly expenses for January

- Highlight the cells from A3 to B6
 - Category headings and January amounts
- Click the Insert tab on the ribbon
- In the Chart section, click Pie then 2D
- Click & drag chart to wherever you want to position it on the sheet.
- Save using Quick Access toolbar button (this will overwrite your existing file)

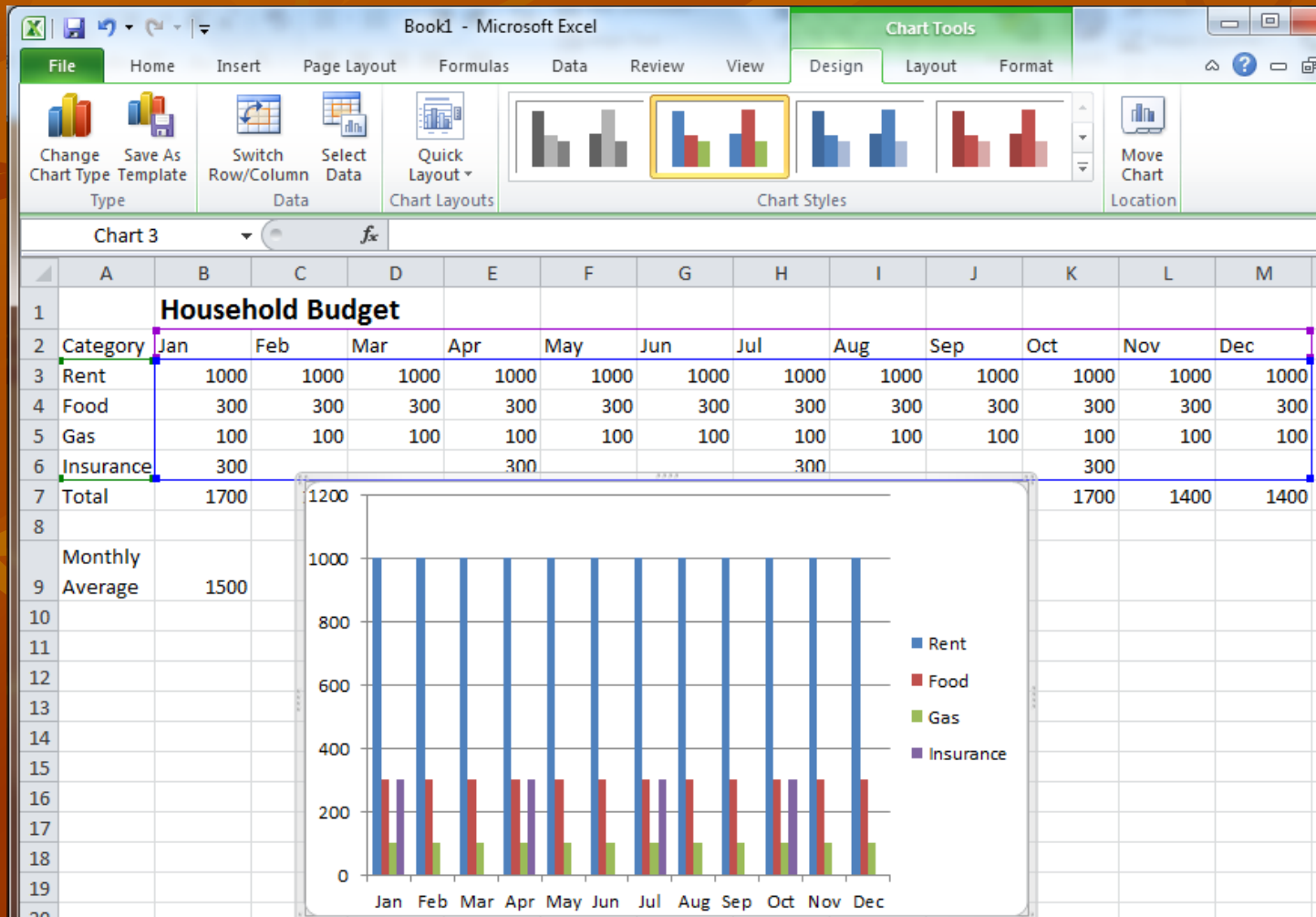
Pie Chart



Bar Chart

- Click & drag to select column and row headings and all data
- On the Insert tab, click Column, then 3d
- To move chart to it's own sheet:
 - Right click on chart
 - Left click Move Chart
 - Left click New Sheet

Bar chart



Formatting Data

Sample Data: Super Bowl History

Date										
	A	B	C	D	E	F	G	H	I	J
1	Date	SB	Winner	PtsW	Loser	PtsL	MVP	Stadium	City	State
2	3-Feb-19	53	New England Patriots	13	Los Angeles Rams	3	Julian Edelman	Mercedes-Benz Stadium	Atlanta	Georgia
3	4-Feb-18	52	Philadelphia Eagles	41	New England Patriots	33	Nick Foles	U.S. Bank Stadium	Minneapolis	Minnesota
4	5-Feb-17	51	New England Patriots	34	Atlanta Falcons	28	Tom Brady	NRG Stadium	Houston	Texas
5	7-Feb-16	50	Denver Broncos	24	Carolina Panthers	10	Von Miller	Levi's Stadium	Santa Clara	California
6	1-Feb-15	49	New England Patriots	28	Seattle Seahawks	24	Tom Brady	University of Phoenix Stadium	Glendale	Arizona
7	2-Feb-14	48	Seattle Seahawks	43	Denver Broncos	8	Malcolm Smith	MetLife Stadium	East Rutherford	New Jersey
8	3-Feb-13	47	Baltimore Ravens	34	San Francisco 49ers	31	Joe Flacco	Mercedes-Benz Superdome	New Orleans	Louisiana
9	5-Feb-12	46	New York Giants	21	New England Patriots	17	Eli Manning	Lucas Oil Stadium	Indianapolis	Indiana
10	6-Feb-11	45	Green Bay Packers	31	Pittsburgh Steelers	25	Aaron Rodgers	Cowboys Stadium	Arlington	Texas
11	7-Feb-10	44	New Orleans Saints	31	Indianapolis Colts	17	Drew Brees	Sun Life Stadium	Miami Gardens	Florida
12	1-Feb-09	43	Pittsburgh Steelers	27	Arizona Cardinals	23	Santonio Holmes	Raymond James Stadium	Tampa	Florida
13	3-Feb-08	42	New York Giants	17	New England Patriots	14	Eli Manning	University of Phoenix Stadium	Glendale	Arizona
14	4-Feb-07	41	Indianapolis Colts	29	Chicago Bears	17	Peyton Manning	Dolphin Stadium	Miami Gardens	Florida
15	5-Feb-06	40	Pittsburgh Steelers	21	Seattle Seahawks	10	Hines Ward	Ford Field	Detroit	Michigan

Formatting for Readability

- A spread sheet with uniform text can look confusing, even overwhelming
- Excel offers many features to “dress-up” a spread sheet to make items stand out, or group items together
- We will start by differentiating the Headers from the data by making the text Bold, then coloring the background by adding a Fill color

Changing Heading Text to Bold

- Select heading row (click the row label “1”)
- Quick way: Home tab, Font group, click B
 - Keyboard shortcut: Hold down the Ctrl key and press “B” key at the same time
- Or, to access all Cell Formatting options: ribbon Home tab, Cells group, Format, Format Cells

A1											
	A	B	C	D	E	F	G	H	I	J	K
1	Date	SB	Winner	PtsW	Loser	PtsL	MVP	Stadium	City	State	
2	3-Feb-19	LIII (53)	New England Patriots	13	Los Angeles Rams	3	Julian Edelman	Mercedes-Benz Stadium	Atlanta	Georgia	
3	4-Feb-18	LII (52)	Philadelphia Eagles	41	New England Patriots	33	Nick Foles	U.S. Bank Stadium	Minneapolis	Minnesota	
4	5-Feb-17	LI (51)	New England Patriots	34	Atlanta Falcons	28	Tom Brady	NRG Stadium	Houston	Texas	

Add Cell Fill

- Click the “A1” cell (Date), then press the shift key and click the “J1” cell (State).
 - This selects the column heading cells, not the entire row.
- **Quick way:** Home tab, Font group, Fill button
- **Or:** Home tab, Cells group, Format, Format Cells, Fill tab, Background Color section on the left, select a light (pale) color, click OK

K2											
	A	B	C	D	E	F	G	H	I	J	K
1	Date	SB	Winner	PtsW	Loser	PtsL	MVP	Stadium	City	State	
2	3-Feb-19	LIII (53)	New England Patriots	13	Los Angeles Rams	3	Julian Edelman	Mercedes-Benz Stadium	Atlanta	Georgia	
3	4-Feb-18	LII (52)	Philadelphia Eagles	41	New England Patriots	33	Nick Foles	U.S. Bank Stadium	Minneapolis	Minnesota	
4	5-Feb-17	LI (51)	New England Patriots	34	Atlanta Falcons	28	Tom Brady	NRG Stadium	Houston	Texas	

Analyzing Data

- Sometimes it is helpful to make calculations on the existing data to give us more insight
- We will add a **new column** showing the **point spread** of each game to see how evenly matched the teams were.
- Then we will use **conditional formatting** to highlight the games with a point spread of more than 10 points

Add Column

- Select column G (click the column label)
- Home tab, Cells group, click Insert to insert a new column to the left
 - Don't need drop-down menu because column is selected so Excel knows to insert a column
- Enter "Pt Spread" in G1
- Widen the G column until "Pt Spread" fits on one line
 - Click and drag the line between the G and H labels, or double-click the line

Add a Formula

- In G2, enter the formula “=D2-F2”
 - Remember to press Enter or tab or click another cell to finalize the data entry

fx =D2-F2					
C	D	E	F	G	H
Winner	PtsW	Loser	PtsL	Pt Spread	MVP
New England Patriots	13	Los Angeles Rams	3	=D2-F2	Julian Edelman
Philadelphia Eagles	41	New England Patriots	33		Nick Foles
New England Patriots	34	Atlanta Falcons	28		Tom Brady

Fill the Formula Down

- Click the fill handle (small black square) at the lower right corner of the G2 cell
 - note cursor becomes “skinny plus”
- Hold the left mouse button down and drag to G54 and release the mouse button
- Select various cells in the G column to see that the formula has been entered in each, adjusted according to the row

Freeze Headings

- Notice as you scroll down the spread sheet to view lower rows, the header row disappears
- To keep the headings visible, use “Freeze Panes”
- Click on the row below the one you want to freeze
 - The row 2 label
- View tab, Window group, click Freeze Panes then click the 1st option
- Now scroll down and notice headings remain visible

Frozen Headings

- Shows heading row and bottom of table

A2											
	A	B	C	D	E	F	G	H	I	J	K
1	Date	SB	Winner	PtsW	Loser	PtsL		MVP	Stadium	City	State
45	18-Jan-76	X (10)	Pittsburgh Steelers	21	Dallas Cowboys	17	4	Lynn Swann	Orange Bowl	Miami	Florida
46	12-Jan-75	IX (9)	Pittsburgh Steelers	16	Minnesota Vikings	6	10	Franco Harris	Tulane Stadium	New Orleans	Louisiana
47	13-Jan-74	VIII (8)	Miami Dolphins	24	Minnesota Vikings	7	17	Larry Csonka	Rice Stadium	Houston	Texas
48	14-Jan-73	VII (7)	Miami Dolphins	14	Washington Redskins	7	7	Jake Scott	Memorial Coliseum	Los Angeles	California
49	16-Jan-72	VI (6)	Dallas Cowboys	24	Miami Dolphins	3	21	Roger Staubach	Tulane Stadium	New Orleans	Louisiana
50	17-Jan-71	V (5)	Baltimore Colts	16	Dallas Cowboys	13	3	Chuck Howley	Orange Bowl	Miami	Florida
51	11-Jan-70	IV (4)	Kansas City Chiefs	23	Minnesota Vikings	7	16	Len Dawson	Tulane Stadium	New Orleans	Louisiana
52	12-Jan-69	III (3)	New York Jets	16	Baltimore Colts	7	9	Joe Namath	Orange Bowl	Miami	Florida
53	14-Jan-68	II (2)	Green Bay Packers	33	Oakland Raiders	14	19	Bart Starr	Orange Bowl	Miami	Florida
54	15-Jan-67	I (1)	Green Bay Packers	35	Kansas City Chiefs	10	25	Bart Starr	Memorial Coliseum	Los Angeles	California

Conditional Formatting

A powerful tool for finding data with certain attributes


- Select all the cells to apply the formatting to:
 - Click on G54, scroll up to the top of the sheet, hold down the shift key & click on G2.
- On the Home tab, in the Styles group, click the “Conditional Formatting” button
- Hover over “Highlight Cell Rules” then click “Greater Than”
- Enter the number 10 and then select a color scheme, like “Green fill with Dark Green Text”, press OK

With Conditional Format

L6											
	A	B	C	D	E	F	G	H	I	J	K
1	Date	SB	Winner	PtsW	Loser	PtsL	Pt Spread	MVP	Stadium	City	State
2	3-Feb-19	LIII (53)	New England Patriots	13	Los Angeles Rams	3	10	Julian Edelman	Mercedes-Benz Stadium	Atlanta	Georgia
3	4-Feb-18	LII (52)	Philadelphia Eagles	41	New England Patriots	33	8	Nick Foles	U.S. Bank Stadium	Minneapolis	Minnesota
4	5-Feb-17	LI (51)	New England Patriots	34	Atlanta Falcons	28	6	Tom Brady	NRG Stadium	Houston	Texas
5	7-Feb-16	50	Denver Broncos	24	Carolina Panthers	10	14	Von Miller	Levi's Stadium	Santa Clara	California
6	1-Feb-15	XLIX (49)	New England Patriots	28	Seattle Seahawks	24	4	Tom Brady	University of Phoenix Stadium	Glendale	Arizona
7	2-Feb-14	XLVIII (48)	Seattle Seahawks	43	Denver Broncos	8	35	Malcolm Smith	MetLife Stadium	East Rutherford	New Jersey
8	3-Feb-13	XLVII (47)	Baltimore Ravens	34	San Francisco 49ers	31	3	Joe Flacco	Mercedes-Benz Superdome	New Orleans	Louisiana
9	5-Feb-12	XLVI (46)	New York Giants	21	New England Patriots	17	4	Eli Manning	Lucas Oil Stadium	Indianapolis	Indiana
10	6-Feb-11	XLV (45)	Green Bay Packers	31	Pittsburgh Steelers	25	6	Aaron Rodgers	Cowboys Stadium	Arlington	Texas
11	7-Feb-10	XLIV (44)	New Orleans Saints	31	Indianapolis Colts	17	14	Drew Brees	Sun Life Stadium	Miami Gardens	Florida
									Raymond James		

Print Headings on Multiple Pages

Freeze Panes does not effect the printed pages, so to print the header row on each printed page:

- Select the “Page Layout” Tab of the ribbon.
- Click the “Print Titles” button in the Page Setup group
 - This opens the “Page Setup” dialog box with the “Sheet” tab selected
- Select the “indicate on sheet” icon  at the end of the “Rows to repeat at top:” field
- Click the row label “1” at the left of the first row and press Enter.
- The “Rows to Repeat” box should show: \$1:\$1
- Press the OK button
- Now try print preview and notice headers on all pages

Fit on printed page

- Note on the previous print preview, all columns did not fit across one page. To fix this we change **page orientation** and **scaling**
- File - Print
- Settings section, lower left:
 - change “Portrait Orientation” to “Landscape Orientation”
 - change “No scaling” at the bottom to “Fit column width to page” (text size & column width automatically adjust)
- Check print preview image: note all columns now fit on one page

Print Preview

Fit all Columns on One Page

Info
New
Open
Save
Save As
Print
Share
Export
Close
Account
Options

Print

Copies: 1

Print

Printer

HP 1200
Ready

[Printer Properties](#)

Settings

Print Active Sheets
Only print the active sheets

Pages: to

Print One Sided
Only print on one side of the p...

Collate
1,2,3 1,2,3 1,2,3

Landscape Orientation

Letter
8.5 x 11

Normal Margins
Left: 0.7" Right: 0.7"

Fit All Columns on One Page
Shrink the printout so that it is...

[Page Setup](#)

Date	SB	Winner	PbW	Lossr	PtsL	MVP	Stadium	City	State
3-Feb-19	LII (53)	New England Patriots	13	Los Angeles Rams	3	10 Julian Edelman	Mercedes-Benz Stadium	Atlanta	Georgia
4-Feb-18	LII (52)	Philadelphia Eagles	41	New England Patriots	33	8 Nick Foles	U.S. Bank Stadium	Minneapolis	Minnesota
5-Feb-17	LI (51)	New England Patriots	34	Atlanta Falcons	28	6 Tom Brady	NRG Stadium	Houston	Texas
7-Feb-16	50	Denver Broncos	24	Carolina Panthers	10	14 Von Miller	Levi's Stadium	Santa Clara	California
1-Feb-15	XLIX (49)	New England Patriots	28	Seattle Seahawks	24	4 Tom Brady	University of Phoenix Stadium	Glendale	Arizona
2-Feb-14	XLVIII (48)	Seattle Seahawks	43	Denver Broncos	8	35 Malcolm Smith	MetLife Stadium	East Rutherford	New Jersey
3-Feb-13	XLVII (47)	Baltimore Ravens	34	San Francisco 49ers	31	3 Joe Flacco	Mercedes-Benz Superdome	New Orleans	Louisiana
5-Feb-12	XLVI (46)	New York Giants	21	Patriots	17	4 Eli Manning	Lucas Oil Stadium	Indianapolis	Indiana
6-Feb-11	XLV (45)	Green Bay Packers	31	Pittsburgh Steelers	25	6 Aaron Rodgers	Cowboys Stadium	Arlington	Texas
7-Feb-10	XLIV (44)	New Orleans Saints	31	Indianapolis Colts	17	14 Drew Brees	Sun Life Stadium	Miami Gardens	Florida
1-Feb-09	XLIII (43)	Pittsburgh Steelers	27	Arizona Cardinals	23	4 Santonio Holmes	Raymond James Stadium	Tampa	Florida
3-Feb-08	XLII (42)	New York Giants	17	New England Patriots	14	3 Eli Manning	University of Phoenix Stadium	Glendale	Arizona
4-Feb-07	XL I (41)	Indianapolis Colts	29	Chicago Bears	17	12 Peyton Manning	Dolphin Stadium	Miami Gardens	Florida
5-Feb-06	XL (40)	Pittsburgh Steelers	21	Seattle Seahawks	10	11 Hines Ward	Ford Field	Detroit	Michigan
6-Feb-05	XXXIX (39)	New England Patriots	24	Philadelphia Eagles	21	3 Deion Branch	Alltel Stadium	Jacksonville	Florida
1-Feb-04	XXXVIII (38)	New England Patriots	32	Carolina Panthers	29	3 Tom Brady	Reliant Stadium	Houston	Texas
26-Jan-03	XXXVII (37)	Tampa Bay Buccaneers	48	Oakland Raiders	27	27 Dexter Jackson	Qualcomm Stadium	San Diego	California
3-Feb-02	XXXVI (36)	New England Patriots	20	St. Louis Rams	17	3 Tom Brady	Louisiana Superdome	New Orleans	Louisiana
28-Jan-01	XXXV (35)	Baltimore Ravens	34	New York Giants	7	27 Ray Lewis	Raymond James Stadium	Tampa	Florida

Save & Open

- File – Save As – Computer – Browse
 - Click desired area at left (such as Documents)
 - Double-click desired folder at right
 - Type desired file name
 - Click Save
- File – Open – Computer – Browse
 - Click desired area at left
 - Double-click desired folder at right
 - Click desired file name
 - Click Open

Data Analysis: Sort & Filter

- **Sort** alphabetically to find data by label text, or numerically to see trends, or by date
- **Sort** by applied conditional formatting to see a selection of data
- **Filter** to see only desired data, hiding (but not deleting) the rest
 - ➔ Multiple sort/filter criteria can be applied
 - ➔ Filters can be cleared to see all data again

Use Filter Button to Sort

- Data tab on ribbon, Sort & Filter group, click Filter
 - This adds down-arrow Filter buttons to each header cell
- Sort alphabetically:
 - Click Filter button in the City cell, then Sort A to Z
- Sort numerically:
 - Click the Filter button in the Pt Spread cell, then Sort smallest to largest
- Sort by conditional formatting:
 - Click the Filter button in the Pt Spread cell, then Sort by color, choose either fill or text

Use Filter Button to Filter

- Click the Filter button in the City cell to open the filter dialog
- Un-check the Select All box
- Check the box for New Orleans and click OK
 - You now see only rows for games played in New Orleans
 - Note Row labels: some are hidden
 - Note drop-down arrow button: filter icon indicates filter has been applied
- To clear filter: Click the Filter button in the City cell to open the filter dialog, click Clear Filter

Filtered to Just New Orleans

Date											
	A	B	C	D	E	F	G	H	I	J	K
1	Date	SB	Winner	PtsV	Loser	PtsL	Pt Spread	MVP	Stadium	City	State
8	3-Feb-13	XLVII (47)	Baltimore Ravens	34	San Francisco 49ers	31	3	Joe Flacco	Mercedes-Benz Superdome	New Orleans	Louisiana
19	3-Feb-02	XXXVI (36)	New England Patriots	20	St. Louis Rams	17	3	Tom Brady	Louisiana Superdome	New Orleans	Louisiana
24	26-Jan-97	XXXI (31)	Green Bay Packers	35	New England Patriots	21	14	Desmond Howard	Louisiana Superdome	New Orleans	Louisiana
31	28-Jan-90	XXIV (24)	San Francisco 49ers	55	Denver Broncos	10	45	Joe Montana	Louisiana Superdome	New Orleans	Louisiana
35	26-Jan-86	XX (20)	Chicago Bears	46	New England Patriots	10	36	Richard Dent	Louisiana Superdome	New Orleans	Louisiana
40	25-Jan-81	XV (15)	Oakland Raiders	27	Philadelphia Eagles	10	17	Jim Plunkett	Louisiana Superdome	New Orleans	Louisiana
43	15-Jan-78	XII (12)	Dallas Cowboys	27	Denver Broncos	10	17	Harvey Martin Randy White	Superdome	New Orleans	Louisiana
46	12-Jan-75	IX (9)	Pittsburgh Steelers	16	Minnesota Vikings	6	10	Franco Harris	Tulane Stadium	New Orleans	Louisiana
49	16-Jan-72	VI (6)	Dallas Cowboys	24	Miami Dolphins	3	21	Roger Staubach	Tulane Stadium	New Orleans	Louisiana
51	11-Jan-70	IV (4)	Kansas City Chiefs	23	Minnesota Vikings	7	16	Len Dawson	Tulane Stadium	New Orleans	Louisiana
55											

Hiding Data

- Rows and columns can be hidden without filtering:
 - Select row(s) or column(s) by selecting the row or column label(s)
 - Right-click, then left-click Hide
 - This can be useful if you want to omit data from print-out
 - To Unhide:
 - Select rows or columns on either side of hidden rows or columns
 - Right-click, then left-click Unhide
- ➔ Note that when rows are hidden because data is filtered, Unhide does not work— you must clear the filter instead.

Sort with 2 Parameters

The Filter button sorts by only 1 parameter at a time.
To sort by multiple parameters, use Custom Sort:

Example: Sort alphabetically by Winner, then for each winner, sort alphabetically by City:

- Select all data:
 - Button at upper left of sheet selects entire sheet
 - Cntrl/a selects all data (1st click on any cell containing data)
- Home tab, Editing group, Sort & Filter, Custom sort
 - Column=Winner, Sort on=Values, Order=A to Z
 - Add level: Column=City, Sort on=Values, Order=A to Z

Quick Count, Sum & Average

- Select desired cells & view lower right of Status Bar
 - Cells with text or labels: Count only
 - Cells with numbers: Sum & Average is calculated

Other Uses for Excel

- Documenting Expenditures, Savings & Investments
- Income Tax form calculations
- Health tracking/graphing, blood pressure, weight, glucose, menu/calories
- Workout Journal
- Stamp collection inventory
- Sports stats, fantasy league, bowling league
- Contact phone, address & email list (mail merge with letter, envelope or label in Word)
- Calendar (templates are available that adjust for year)