Excel – Level 3

Computer Training Solutions

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Excel – Level 3

Course Outline

1. Advanced Formula Construction

- Use Names
- Use the IF Function
- Use the VLOOKUP Function

2. Using Pivot Tables

- Create Pivot Tables
- Modify Pivot Tables
- Group and Summarize Data in a Pivot Table

3. Working With Multiple Worksheets

- Use a Multiple-Sheet Workbook
- Work with Workbooks
- Link Cells in Different Workbooks
- Workbook Versus Links and Workspaces

4. Consolidating Data

- Consolidate Data from More Than One Worksheet
- Consolidate Data by Category

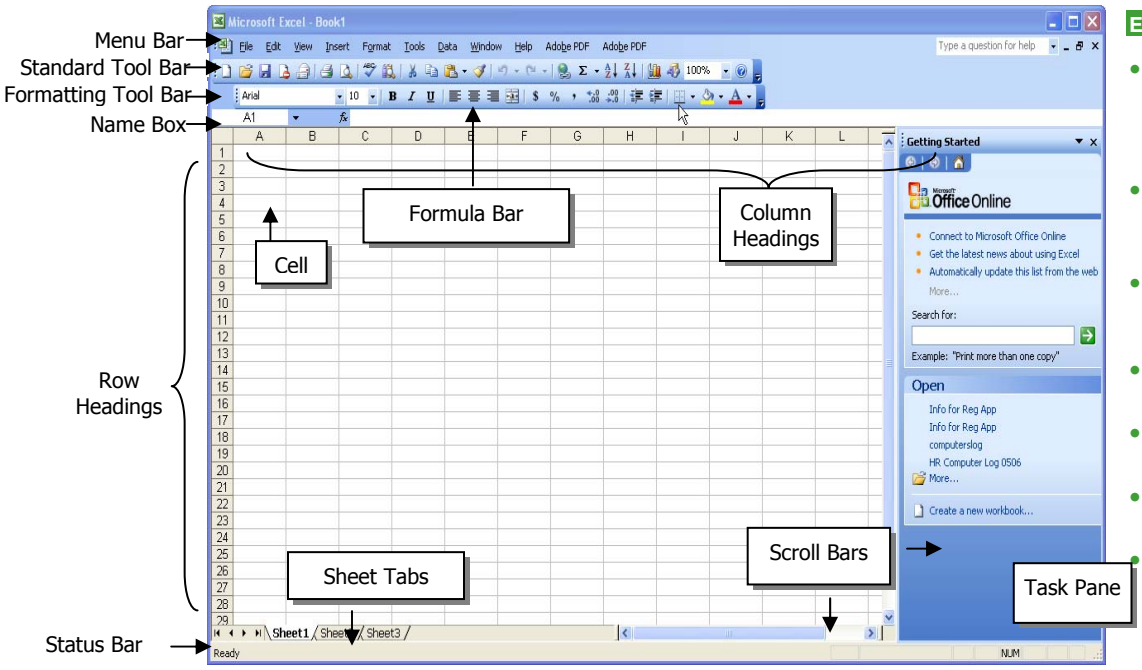
5. Using Protection & Display Options

- Add, Edit and Delete Comments
- Protect Workbooks
- Lock Cells in a Worksheet
- Password Protect Worksheets

Excel – Level 3

EZ Start Card

Excel Application Window



Excel Facts

- Column headings are designated letters A – IV for a total of 256 columns.
- Row headings are designated numbers from 1 to 65, 536.
- The intersection of a column and a row is called a cell.
- Cells store data entered into a spreadsheet.
- One worksheet has 16,777,216 cells.
- By default, a workbook contains 3 worksheets.
- You can have up to 255 separate worksheets in a workbook.

General Keyboard Shortcuts

New workbook	Ctrl + N
Open a workbook	Ctrl + O
Save a workbook	Ctrl + S
Close all workbooks	Shift + File/Close All
Undo	Ctrl + Z
Redo	Ctrl + Y
Repeat last function	F4
Cancel	Esc
Help	F1
New chart	F11
Show formulas in cells	Ctrl + ~ (Tilde)

Navigation & Editing Shortcuts

Go to cell A1	Ctrl + Home
Beginning of row	Home
To the last cell with data	Ctrl + End
To go to a specific cell	F5 or Ctrl + G
One cell left, right, up, down	Arrow keys
Scroll down one screen	Page Down
Scroll up one screen	Page Up
Screen left	Alt + Page Down
Screen right	Alt + Page Up
Edit active cell	F2
Absolute Reference	F4
Cut	Ctrl + X
Copy	Ctrl + C
Paste	Ctrl + V
Select all	Ctrl + A
Format selected cell(s)	Ctrl + 1

Mouse Shapes

When you point in the middle of a cell, the mouse pointer looks like a thick cross, it can be used to select a single cell or a block of cells for editing purposes.

The "11 O'Clock" arrow pointer allows you to move the selected cell(s) to another location on the worksheet by dragging or copies the cell by holding the CTRL key in conjunction with the click and drag.

The thin cross-hair shaped mouse is used with the fill/copy handle at the bottom right corner of the cell. You can fill in a series or copy the cell contents to adjacent cells.

Formulas

To create a basic formula:

1. Select the cell in which you would like the formula to appear.
2. In the formula bar, type an equal sign, and then type the formula you would like to perform.
3. Press enter.

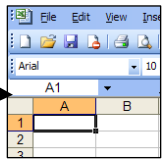
Symbols used to calculate: add (+), subtract (-), multiply (*), divide (/),

Built-in Functions

Function	Description
=SUM(C1:C9)	Adds the contents of the range
=AVERAGE(C1:C9)	Calculates the average
=MAX(C1:C9)	Returns the highest value
=MIN(C1:C9)	Returns the lowest value
=COUNT(C1:C9)	Counts the number of values in a range
=COUNTA(C1:C9)	Counts the number of non-blank cells in a range
=COUNTIF(C1:C9,10)	Counts the number of 10's in the selected range
=NOW()	Returns the current date

Defining Range Names

1. Select the cell or range of cells that you want to name
2. Click in the **Name Box** and enter the name or click on **Insert→Name→Define** and enter the value in the Refers To text box



Naming a cell by using existing row and columns labels

3. Select the appropriate range of cells
4. Choose **Insert→Name→Create**
5. Verify that the appropriate option is selected under **Create Names In** and click **OK**

Using IF function

- **=IF**(condition, true, false)
  Example: =IF(A2>=5,1000,500)
  If A2 is greater than or equal to 5, place 1000 in the cell, if not, place 500 in the cell
- Use quotations marks for literal text
  Example: =IF (A2>=50, "Pass","Fail")
  If A2 is greater than or equal to 5, place Pass in the cell, if not, place Fail in the cell

Using the NOW function

- **=NOW()** will return today's date and will update
- Press **CTRL + ;** to enter static date
- Press **Ctrl + Shift + ;** to enter static time

Using the VLOOKUP function

- **=VLOOKUP** (cell being tested, lookup table, column # to return)
  Example: =VLOOKUP(A2,$C$2:$D$9,2) will check the value of A2, find it in the table in C2:D9, and return the value from the second column
- **=HLOOKUP** (will lookup horizontally)

Using the PMT function

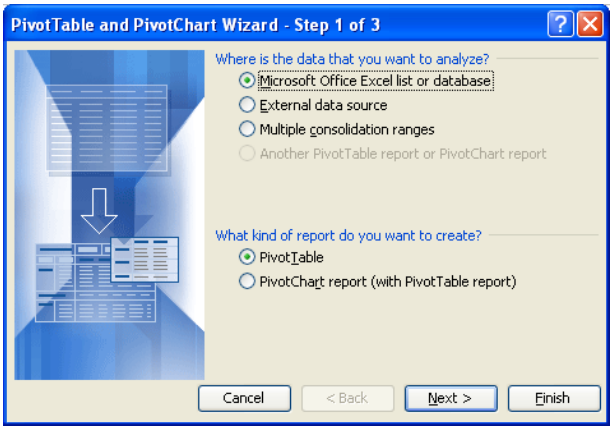
- **=PMT**(interest rate, number of payments, amount of loan)
  Example: =PMT(7%/12,12,15000) returns the monthly payment amount of $1,297.90

Creating a Pivot Table

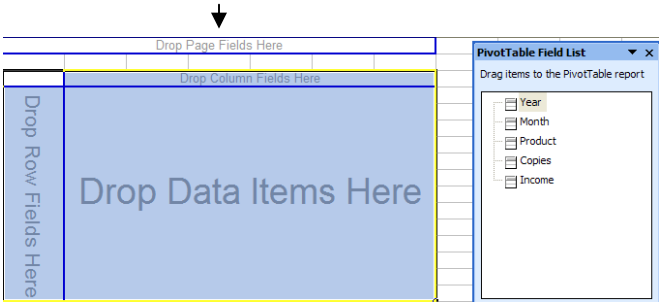
1. Open the workbook where you want to create the PivotTable report.
2. Select a cell within the list containing the source data.
3. Choose Data→Pivot Table And Pivot Chart Report…
4. Identify where the data is located that you want to analyze, choose **PivotTable** as the type of report you want to create, then click **Next**.
5. Confirm this is the data range that you want to use, then click **Next**.
6. Select where you want the new PivotTable to be created, and then click **Finish**.
   The Layout area of the Pivot Table contains the following areas:
   Row - to show items in the field as row labels
   Column - to show items in the field as column labels
   Data - to summarize values in the body of the table
   Page - to show data for one item at a time in a table
7. Click into any cell in the database and choose **Data→Pivot Table→PivotChart Report**
8. Select the appropriate data source and click **Next** (Excel automatically selects a range of contiguous cells surrounding the active cell)
9. Click **Next** and choose the location of the pivot table
10. Click **Finish** and drag the appropriate fields into the layout area

Adding a Field to a Pivot Table

1. Select the cell within the pivot table.



2. Click the **PivotTable Wizard** button



3. Drag the appropriate fields into the layout area

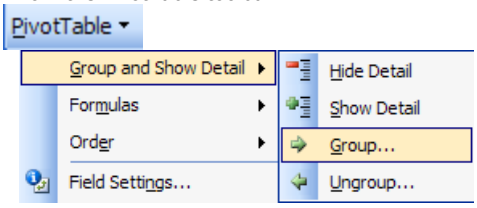
Using PivotTable AutoFormat

1. On the PivotTable toolbar, click the **Format Report** button
2. Select the autoformat of your choice and click **OK**

Grouping Items in a Pivot Table

6. Select the range of items to group and choose **Data→Group and Outline→Group**
7. To ungroup items, choose **Data→Group and Outline→Ungroup,** Or,

Select the range of items to group then click on the down-arrow of the icon from the PivotTable toolbar.



Refreshing a PivotChart Report

1. Click in the report.
2. On the **PivotTable** toolbar, click **Refresh Data** .

Creating a PivotChart Report

8. Select a cell in the existing PivotTable report
9. On the PivotTable toolbar, click the **Chart Wizard** button 

Format Worksheet Tabs

Right-click the sheet tab and choose **Rename.**
Type in the new name and press **Enter** or double-click the sheet tab and type in the new name.
Press **Enter**.

Reposition Sheet Tabs

Click and drag the sheet tab it to its new position.

Insert and Delete Worksheets

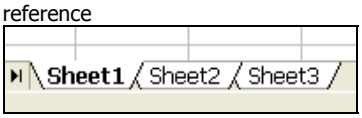
- To insert a worksheet, select an existing worksheet tab, right-click and choose Insert.
- To delete a worksheet, select the worksheet tab, right-click and choose Delete. (Note: If you delete a worksheet, you cannot undo).

Copy and Paste Worksheets

1. Select the worksheet you want to copy, right-click and choose **Move** or **Copy**.
2. Select which workbook you want to copy the worksheet in to.
3. Check the **Create A Copy** check box.
4. Select which sheet you want the copied worksheet pasted in front of, then click **OK**.

Creating a Three-dimensional Reference

1. Select the cell that you want to contain the formula
2. Type = and the function name and open a bracket
3. Color button, choose the desired color
4. Select on the first worksheet tab that you want to include in the reference



5. Select the cell that you want to reference
6. While pressing **Shift**, select the last worksheet tab in the group
7. Press Enter to complete the formula
8. *e.g. =sum('Australian!:SA'!B4)*

Creating a formula that links Workbooks

1. If you are linking to a new workbook, save the new workbook before creating the link.
2. In the workbook that will contain the formula, select the cell in which you want to enter the external reference.
3. If you are creating a new formula, type **=** (an equal sign).
4. If you are entering the external reference elsewhere in the formula, type the operator or function that you want to precede the external reference.
5. If you want to create a link to another worksheet in the active workbook, click the worksheet that contains the cells you want to link to.
6. If you want to create a link to a worksheet in another workbook, switch to the other workbook, and then click the worksheet that contains the cells you want to link to.
7. Select the cells you want to link to.
8. Complete the formula. When you finish entering the formula, press **ENTER**.

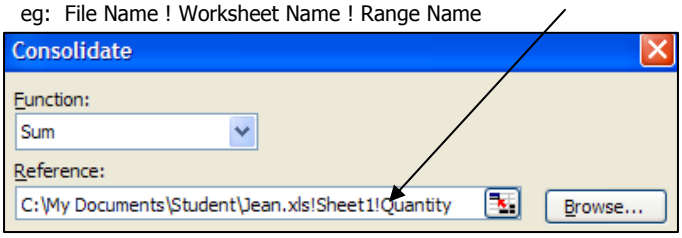
e.g. =[Jaen.xls]Sheet1!$D$15+[Monder.xls]Sheet1!$D$15

Consolidating From More Than One Workbook

1. Click in the cell of the workbook that is to contain the results of the consolidation. Or, if necessary, highlight the destination range for the consolidated data.
2. Click on **Data, Consolidate...** from the Menu bar.
3. Choose the desired Function (eg. Sum).
4. Click on **Browse...** button.
5. Select the file (workbook) to begin building the first source reference.

   The Reference is made up of 3 parts separated by an exclamation mark (!):

   eg: File Name ! Worksheet Name ! Range Name

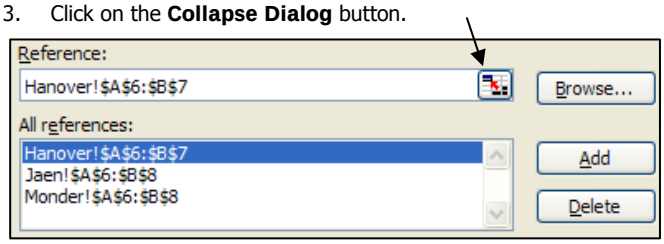


6. Click the **Add** button and continue to add more source references as needed.
7. Place a check mark in **Create Links To Source Data** if you want to link consolidated data back to its source data.
8. Click on **OK**.

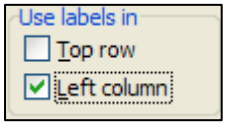
- Click **Margins** to show margin lines
- Click **Close** to close Print Preview

Consolidating Data by Category

1. Select the upper-left cell of the destination range in the desired worksheet.
2. Choose **Data, Consolidate...** from the Menu Bar.
3. Click on the **Collapse Dialog** button.



4. Activate the worksheet that contains the source data, then highlight the desired range to consolidate.
5. Click on the **Collapse Dialog** button again.
6. Click on **Add**.
7. Continue to select other source references as desired.
8. In the Use Labels In area, check either the **Top row** or **Left column**.
9. Check **Create links to source data** if desired.
10. Click **OK**.



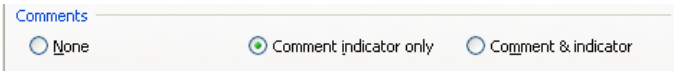
Adding Comments

1. Select the cell that you want to add a comment to
2. Right-click and select **Insert Comment**
3. Type in your comment and click outside the comment box.

To view the comment, point to the cell containing the comment and a text box appears.

Controlling Display of Comment Indicators

11. Choose **Tools**, **Options**
12. Select the **View** tab and make desired selection from the comments section



Editing/Deleting Comments

1. Select the cell that includes the comment you want to edit or delete.

Right-click and choose either **Edit Comment** or **Delete Comment.**

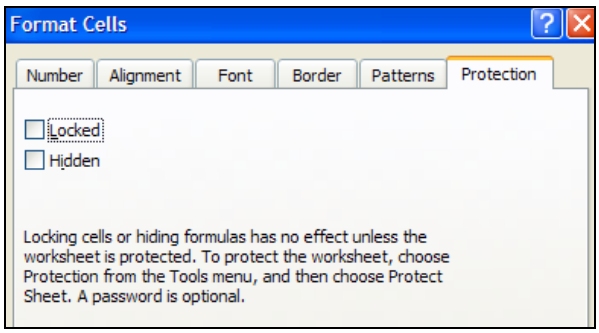
Protecting a Workbook

1. On the **File** menu, click **Save As**.
2. On the **Tools** menu, click **General Options**.
3. Do either or both of the following:
4. If you want users to enter a before they can view the workbook, type a password in the **Password to open** box, and then click **OK**.
5. If you want users to enter a password before they can save changes to the workbook, type a password in the **Password to modify** box.

   Note You can also secure a workbook with a password on the **Security** tab of the **Options** dialog box (**Tools** menu, **Options** command).

Protecting a Worksheet

1. Select the cell range that you want to be able to **change** after you protect the worksheet.
2. On the **Format** menu, click **Cells**, and then click the **Protection** tab.
3. Clear the **Locked** check box.



   Note: After you protect the worksheet, the cells that you unlocked in this procedure are the only cells that can be changed.

4. On the **Tools** menu, point to **Protection**, and then click **Protect Sheet**

   To prevent others from removing worksheet protection, type a password, click **OK**, and then retype the password in the **Confirm Password** dialog box. Passwords are case sensitive. Type the password exactly as you want to enter it, including uppercase and lowercase letters.

   To remove Worksheet protection, choose Tools→Protection→Unprotect Worksheet

Exercise 1 – Creating an Advanced Formula

1. Open the file **Practice – Advanced Formulas**.
2. By using the **Name** box, give names to cells **H3** and **H4**.
3. By using the **Paste Function** dialog box, create a formula in cell **G7** that will calculate a commission for Conner only if the sales total is greater than or equal to the quota. If it is not greater than or equal to the quota, have it return the text **No Commis**.
4. Copy the formula created in Step 3 to the range **G8:G10**. The Commisions should look like this:
5. Save the file and close it.

Comm.
$87.00
$75.00
$105.00
No Commis

Exercise 2 – Creating a Pivot Table

1. Open the file **Practice – Pivot Table**.
2. Using the data list on Sheet 1, create a pivot table on cell **A1** of **Sheet2**, showing the following:
   Store as the page field
   Product as the row field
   Units as the data field
3. Show product totals for the **Rochester** store. Your screen should look like this:

	A	B
1	Store	Rochester
2		
3	Sum of Units	
4	Product	Total
5	floppy drive	18
6	keyboard	48
7	memory board	197
8	monitor	456
9	system unit	13
10	Grand Total	732
11		

4. Move the **Page** field (Store) to cell **B3** to place it in the column layout area. Your screen should now look like this:

	A	B	C	D	E	F	G	H
1	Drop Page Fields Here							
2								
3	Sum of Units	Store						
4	Product	Albany	Buffalo	Ithaca	Rochester	Syracuse	Utica	Grand Total
5	floppy drive		20		18		5	43
6	hard drive	40				60	17	117
7	keyboard	146			48			194
8	memory board	2	345		197	89		633
9	monitor	64	40	43	456	110		713
10	mouse	218	160	20		67		465
11	system unit		148		13	60	100	321
12	Grand Total	470	713	63	732	386	122	2486

5. Save and close the file.

Exercise 3 – Creating Linking Formulas

1. Open the files **Company Forecast, Engineering Dept Forecast, Manufacturing Dept Forecast,** and **Marketing Dept Forecast**.
2. Create a linking formula in cell **C6** of **Company Forecast** that totals the non-exempt forecast numbers for all three departments.
3. Create another linking formula for the exempt forecast numbers.
4. Your file should look like this:

	A	B	C
1		CIRCA Company	
2		New Hire Forecast - Qtr 4	
3			
4			
5		Position	Forecast
6		Non-Exempt	2
7		Exempt	1
8			
9		Total:	3
10			

5. Save and close the file.
6. Save the workbook as **My Calculations**.
7. Close the workbook.

Exercise 4 – Consolidating Data

1. Open the files **All Divisions, North American Division,** and **South American Division**.

2. Check the named range in both the **North American Division** and the **South American Division** files.

3. Activate the **All Divisions** file. In the range **B4:E8** consolidate the data from the North and South American Division files by using the range name **Quarters**. Be sure to create links to the source data.

4. Use the outline symbols to view detail for all items. Your screen should look like this:

5. Hide all the detail.

6. Save and close the file.

	A	B	C	D	E
1	**All Divisions**				
2					
3	Item	Qtr1	Qtr2	Qtr3	Qtr4
4		200	600	700	400
5		150	300	325	400
6	Bonnets	350	900	1025	800
7		300	200	500	600
8		285	300	500	545
9	Funnels	585	500	1000	1145
10		200	400	500	100
11		190	250	400	400
12	Reels	390	650	900	500
13		300	300	100	100
14		250	300	200	210
15	Trays	550	600	300	310