Lesson 1 Dates and Times in Excel

Dates in Excel

If you've ever lost the date formatting on a cell, you have seen it turn into a strange number. For example according to Excel these cells are the same number: 1

	A	B
1	10/17/2013	41564

1

The serial number 41,564 tells us how many days it has been since 1st January 1900*. The date serial numbers are sequential one day at a time.**2**

	A	B
1	10/17/2013	41564
2	10/18/2013	41565
3	10/19/2013	41566

2

- Note: The default date system for the Macintosh system begins with January 1, 1904.This may cause some confusion if you try to use the same file in both a Mac and a PC. The settin can be changed in the Excel Options on the file menu.

Times in Excel

One day has 24 hours , so in *Microsoft Excel*, **1** is equivalent to **24 hours**,*0.5* is equivalent to **12 hours**. If we take our October 17th date, and add in a time of 12:00pm, it translates into 41564.5, the 0.5 representing the half way point of the day.

1= 24 hours,0.5 = 12 hours,0.025 = 6 hours.

	A	B
1	10/17/13 12:00 PM	41564.5

3

If you leave the date off a time, Excel will default to 1/0/1900 as the "understood date. You can ignore it, but realize that is what happens if you change a time format into a date format. All three if these cells contain 12:00PM, they are just displayed with different formats. **4**

	A	B	C
1	12:00 PM	1/0/1900	1/0/00 12:00 PM

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Useful Time and Date Shortcuts

Shortcut	Result	Note
Ctrl-;	Current Date	Control Semicolon
Ctrl-:	Current Time	Control Colon
Shift-Ctrl-3	Formats the cell to show DD-MMM-YYYY	3/# from the full keyboard
Shift-Ctrl-2	Formats the cell to show h:mm AM/PM	2/@ from the full keyboard

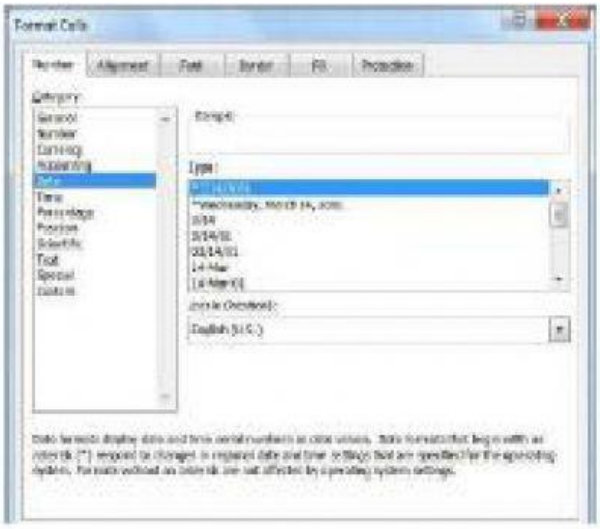
Custom Formatting

Days, Months and Years

You can format a cell with a preset list of options in the **Format Cells Window.**

1. Click the *More* button in the **Number** group.1
2. *Right-click* on a cell and choose **Format** cells.1
3. Select the cell and press **CTRL-1** to open the window. **1**

Excel has a pretty extensive list of data and time formats, but it is possible to custom build a date format, using simple abbreviations.



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Dates for Tuesday, February 3, 2004					
Day		Month		Year	
D	3	m	2	yy	04
dd	03	mm	02		
ddd	Tue	mmm	Feb	yyyy	2004
dddd	Tuesday	mmmm	February		

Hours, minutes and seconds.

If you use "m" immediately after the "h" or "hh" code or immediately before the "ss code, Excel displays minutes instead of the month.

Times for 1:02:05					
Hours		Minutes		Seconds	
H	1	m	2	s	5
hh	01	mm	02	ss	05

If you would like to use the **12 hours clock** you need to add the appropriate designator at the end. Access will accept any of the following *AM/Pm, am/pm, A/P, a/p, AMPM.*

Times for 17:02:05					
Hours		24 hour clock		12 hour clock	
H	17	h:m	17:2	h:m am/pm	5:2 PM
hh	17	h:mm	17:02	h:mm am/pm	5:02 PM
h AM/PM	5 PM	hh:mm	17:02	hh:mm am/pm	05:02 PM

If you need to go smaller, add **.00** after the second format **(ss.00**) will give the fraction of a second**.**

Totalling Time

The time format is Excel stay within the default of *24 hours*, *60 seconds*. If we do math we may want it to display the times beyond these boundaries. For this, we use the brackets **{}** around the abbreviation.

Beyond the Boundaries					
36 Hours		75 minutes		75 seconds	
h	12	m	*(assumes month)*	s	15
hh	12	mm	*(assumes month)*	ss	15
[h]	36	[m]	75	[s]	75

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Simple date/Time Math

Because dates and times are stored as numbers you can do simple math with them.

Begin	End	Formula	Result
01/02/2013	05/15/2013	=Last Date – First Date	Days Elapsed = 133
8:15 AM	5:00 PM	=Last Time – First Time	Time Elapsed = 8:45 (8 hours 45 minutes)

Times are a fractional of the day. As mentioned earlier, 0.5=12 hours. If you multiply a time by 24 we should get the numeric value.

Time	Time * 24
8:45 AM	6:00 PM

Why doesn't it look right? You have to format the result as a true number field.

Time	Time * 24 (formatted as a number)
8:45 AM	8.75

Remember if you are going beyond the 24 hour clock, you will need to set up a custom format.

Questions.

1. **What does the serial numbers mean in Excel?**

2. **Explain what 1 , 0.5,0.25 means ?**

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3.What are the useful shortcuts List them?

4. Explain the steps in custom formatting for dating?

5. Explain what “m”, ”mm”, “mmm” mean?

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