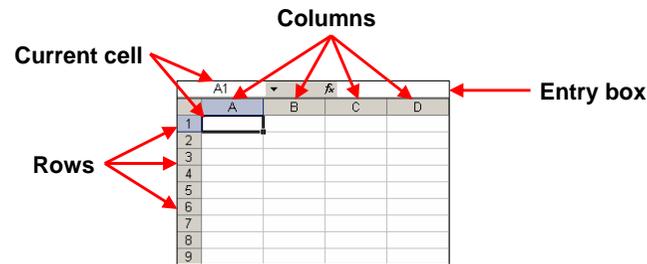


Microsoft Excel - Overview

Used to represent a table of data

- Rows (labelled with numbers)
- Columns (labelled with letters)
- Cells



http://en.wikipedia.org/wiki/Microsoft_Excel

Changing appearance of cells

Alter Size

- Click on cell separator and drag

Add Borders

- Format Cell

Add Shading

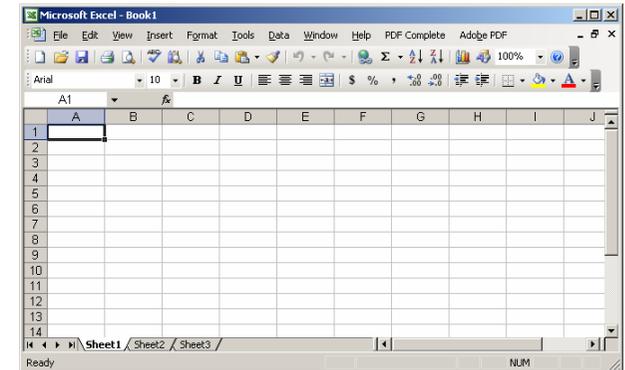
- Format Cell

Font

- Style
- Size
- Alignment

Numbers

- Decimal points



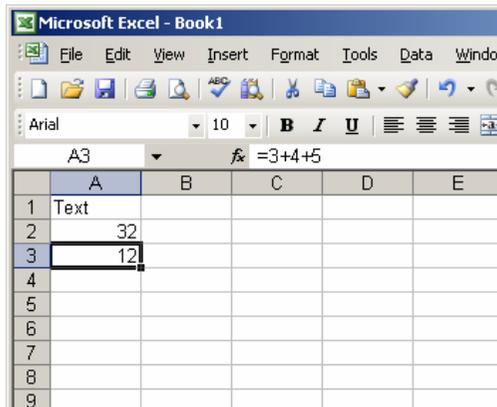
Entering Data

Cells contain

- Text
- Numbers
- Formulae (start with "=")

Entry box

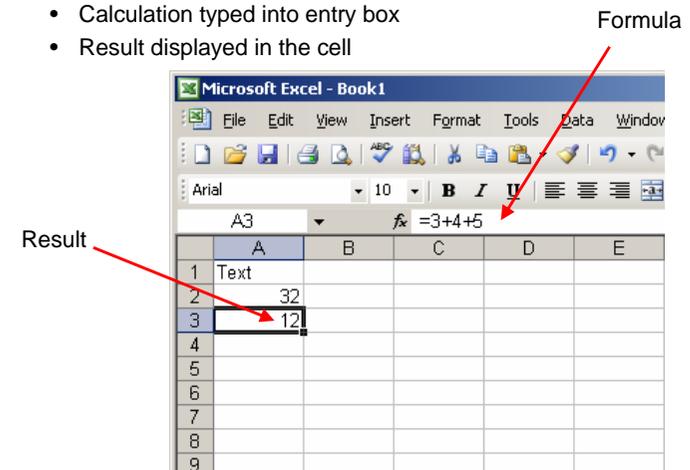
- Type data in entry box
- Hit Enter key to accept value
- All formulae are recalculated
- Results shown in each cell



Formulae

Entering formulae

- Always begin with an equals sign
- Calculation typed into entry box
- Result displayed in the cell



Using Cell References

Cell Reference

- Formulae refer to other cells
- Specify cell location using Row and Column IDs

	A	B	C	D	E
1					
2	Hours Worked				
3					
4	Name	Monday	Tuesday	Total	
5	Joe	12	6	18	
6	Jenny	23	21		
7	John	4	8		
8	Julia	1	9		
9					

Filling Down and Filling Right

Save time

- Fill many cells with same contents
- Select a group of cells
- Fill Right
- Fill Down

	A	B	C	D
1		100		
2				
3				
4				
5				

	A	B	C
1		100	
2		100	
3		100	
4		100	
5		100	
6		100	
7		100	
8		100	
9		100	
10		100	

	A	B	C
1		100	100
2			
3			
4			
5			
6			
7			
8			
9			
10			

	A	B	C
1		100	100
2		100	100
3			
4			
5			
6			
7			
8			
9			
10			

Filling Cells with Formulae

Use Fill Down/ Fill Right on formulae

- Saves us entering new formula for each row

	A	B	C	D	E
1					
2	Hours Worked				
3					
4	Name	Monday	Tuesday	Total	
5	Joe	12	6	18	
6	Jenny	23	21		
7	John	4	8		
8	Julia	1	9		
9					

- D5 should contain $=B5 + C5$
- D6 should contain $=B6 + C6$
- D7 should contain $=B7 + C7$
- D8 should contain $=B8 + C8$

Relative References

Cell reference in formula

- Use same formula, different cell references
- Cell reference is relative to position of formula
- Spreadsheets adjust formula automatically during fill operation

	A	B	C	D	E
1					
2	Hours Worked				
3					
4	Name	Monday	Tuesday	Total	
5	Joe	12	6	18	
6	Jenny	23	21		
7	John	4	8		
8	Julia	1	9		
9					

Cell references that don't change

Absolute references

- Sometimes the cell reference should not change
 - Eg. for constants
- Use a dollar sign \$ before the row or column

	A	B	C	D	E	F
1						
2		Hours Worked				
3						
4	Pay Rate :	\$10.00				
5						
6	Name	Monday	Tuesday	Total	Pay rate	
7	Joe	12	6	18	10	
8	Jenny	23	21	44	10	
9	John	4	8	12	10	
10	Julia	1	9	10	10	

formula stays the same

Relative and Absolute references

Sometimes formulae require a mixture of references that change and references which are fixed

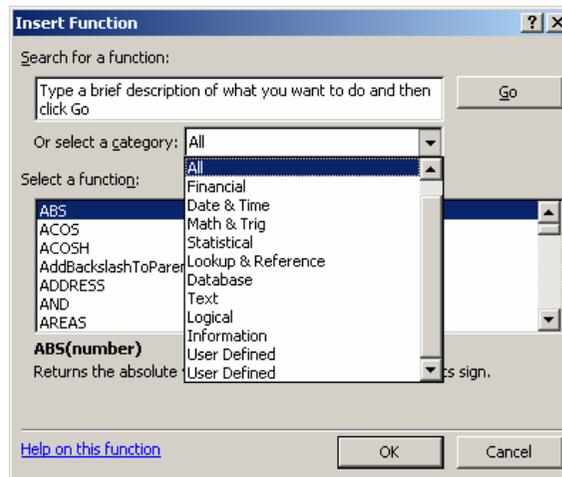
	A	B	C	D	E
1					
2		Hours Worked			
3					
4	Pay Rate :	\$10.00			
5					
6	Name	Monday	Tuesday	Total	Total Pay
7	Joe	12	6	18	180
8	Jenny	23	21	44	440
9	John	4	8	12	120
10	Julia	1	9	10	100
11					

= D7 * \$B\$4

Using built-in functions

Insert a Function

- Many categories
- Help is useful



Functions

Many functions exist

- Allow us to make more complicated formulae
- Examples
 - SUM
 - MAX
 - MIN
 - AVERAGE

Specifying a range of cells

- Top Left cell
- Bottom Right cell
- B6:C10

	A	B	C	D	E
1					
2		Hours Worked			
3					
4	Pay Rate :	\$10.00			
5					
6	Name	Monday	Tuesday	Total	Total Pay
7	Joe	12	6	18	180
8	Jenny	23	21	44	440
9	John	4	8	12	120
10	Julia	1	9	10	100

Boolean Logic

Boolean value

- True or False
- 2-valued logic

Compare two different values

- =
- >
- <
- >=
- <=

Example. Are the following true or false?

- =(3 = 4)
- =(4 < 6)
- =(MAX(5, 6) = 5)
- =(SUM(1,2,3) = 6)

Boolean Functions

AND(a, b)

- True only when a and b are both true

OR(a, b)

- True if either a is true or b is true

NOT(a)

- True only when a is false

Are the following formulae TRUE or FALSE?

- =AND(3 = 4, 2 = 2)
- =OR(7 < 5, 3 > 3)
- =NOT(3 = 2)
- =OR(AND(2 = 3, 4 > 3), NOT(2 = 3))

IF functions

Makes a decision

- Different values used in the cell depending on the logical test

IF(logical_test , value_if_true, value_if_false)

Must be either true or false

- value
- condition (test)
- boolean function

This value appears
in the cell if the
boolean is true

This value appears
in the cell if the
boolean is false