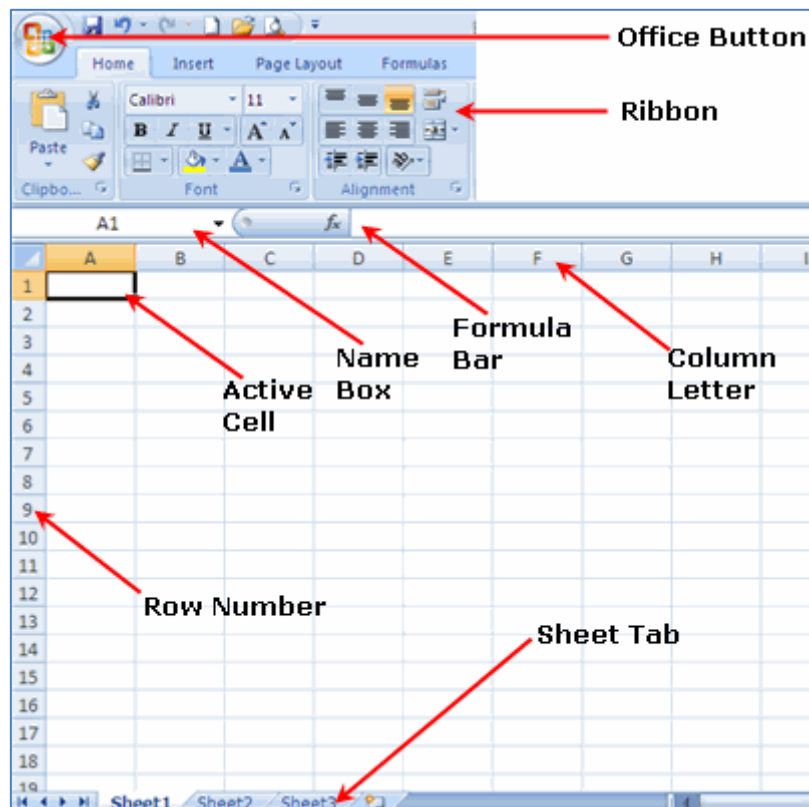


1.4 The Spreadsheet

What is a Spreadsheet?

A **spreadsheet** is a program that works with numbers. It is used for doing calculations and drawing charts. Many different software houses have produced spreadsheet applications. One popular application is **Excel**. This is produced by Microsoft.



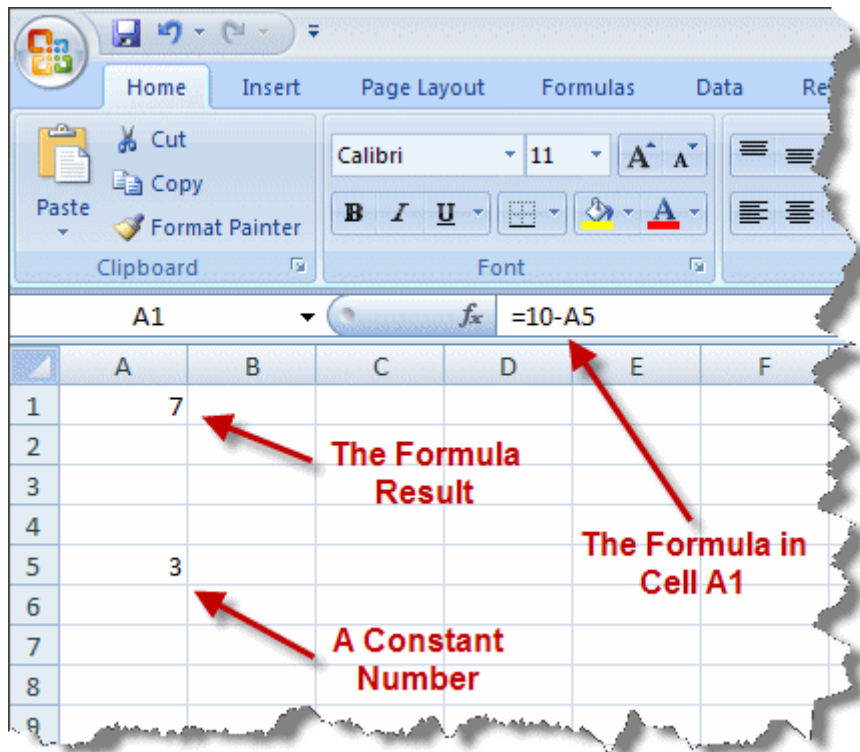
How do we refer to a cell?

We refer to a cell by writing its column letter and row number e.g. D5

What's in a cell?

In a cell we can put one of the following items:

- number
- label
- formula
- function



The diagram above shows a number in cell A5 and a formula in cell A1. A **formula** is a calculation. Note that it starts with an = sign. In A1 we wrote `=10-A5` which means “take away the number found in A5 from 10 and display the result here”.

	A	B	C	D
1	My Chocolate Addiction			
2				
3		Monday	Tuesday	Wednesday
4	Mars Bars	1	2	1
5	Twix	7	5	3
6	Bounty	8	3	2
7	Other	1	2	2
8				
9	Day Totals	<code>=SUM(B4:B7)</code>		
10				

In the above diagram we find numbers, labels and a function. A **label** is a word or sentence. Labels are found in cells A4, A5, B3, etc. In B9 we have a function. A **function** is a formula that is already defined for us. In this case we use `SUM(B4:B7)`. Its meaning is very clear. Note that when writing a function we must start with an = sign.

Exercise

- (a) In the following diagram write in which cells one can find (i) labels, (ii) numbers, (iii) formulas, (iv) functions.

	A	B	C	D	E	F	G
1							
2							
3							
4							
5				Mark Maths	Mark English		
6			John	5	6		= D6 + E6
7			Anna	7	7		
8			Marthese	5	8		
9			Jeffrey	8	6		
10							
11				=AVERAGE(D6:D9)	=AVERAGE(E6:E9)		
12							
13							
14							
15							

- (b) Refer to the diagram shown above. What values will appear in the cells G6, D11 and E11?
- (c) Create the following table and reply to the questions set in the diagram.

	A	B	C	D	E	F	G	H	I	J	K
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

Month's Expences

	Week 1	Week 2	Week 3	Week 4	
Food	26	15	22	30	
Clothes	7	7	32	0	
Petrol	5	8	0	15	
Entertainment	8	12	10.5	11	
Study	16	2	0	7	

What would you write here so that it will give you the amount spent in week 1? Do the same for the other weeks.

What would you write here so that it will give you the average amount of money spent per week on study? Do the same for the other items.

(d) The following spreadsheet shows an example of **profit analysis**. Write formulas that should be written in cells F5, G5, G13, E16 and D23.

	A	B	C	D	E	F	G	H
1	PIZZERIA BONTA` WEEKEND PROFIT ANALYSIS							
2								
3								
4		ITEM	QUANTITY	COST	PRICE	PROFIT PER ITEM	TOTAL PROFIT	
5		Pizza Margherita	30	€ 1.20	€ 4.00	€ 2.80	€ 84.00	
6		Pizza Capricciosa	45	€ 1.50	€ 5.50	€ 4.00	€ 180.00	
7		Pizza 4 Stagioni	33	€ 1.40	€ 5.30	€ 3.90	€ 128.70	
8		Beer	67	€ 1.20	€ 2.50	€ 1.30	€ 87.10	
9		Coke	88	€ 0.70	€ 1.50	€ 0.80	€ 70.40	
10		Orange	59	€ 0.70	€ 1.50	€ 0.80	€ 47.20	
11		Lemonade	115	€ 0.70	€ 1.50	€ 0.80	€ 92.00	
12		Water	74	€ 0.50	€ 1.00	€ 0.50	€ 37.00	
13							€ 726.40	Income
14								
15			HOURLY PAYMENT	NO. OF HOURS	TOTAL PAYMENT			
16		Chefs	€ 7.00	20	€ 140.00			
17		Waiters	€ 3.00	40	€ 120.00			
18		Cashiers	€ 3.00	20	€ 60.00			
19						€ 320.00		Expenditure
20								
21								
22								
23							€ 406.40	Profit

Some features of spreadsheets

Basic features
Copy/paste cells in a range
Delete rows and columns
Insert rows and columns
Supports multiple worksheets
Sorting of cell regions
Search capability
Print worksheet
Recalculation
Autofill

Formatting features

Bold and italic text formatting
Text and background color choice
Border formatting
Cell sizing
Cell text alignment
Cell merging
Text wrapping

Cell type features

Choice of cell types including General, Number, Currency, Percentage, Date, Time and Text
Choice of currency symbol
Choice over the number of decimal places shown

Functions

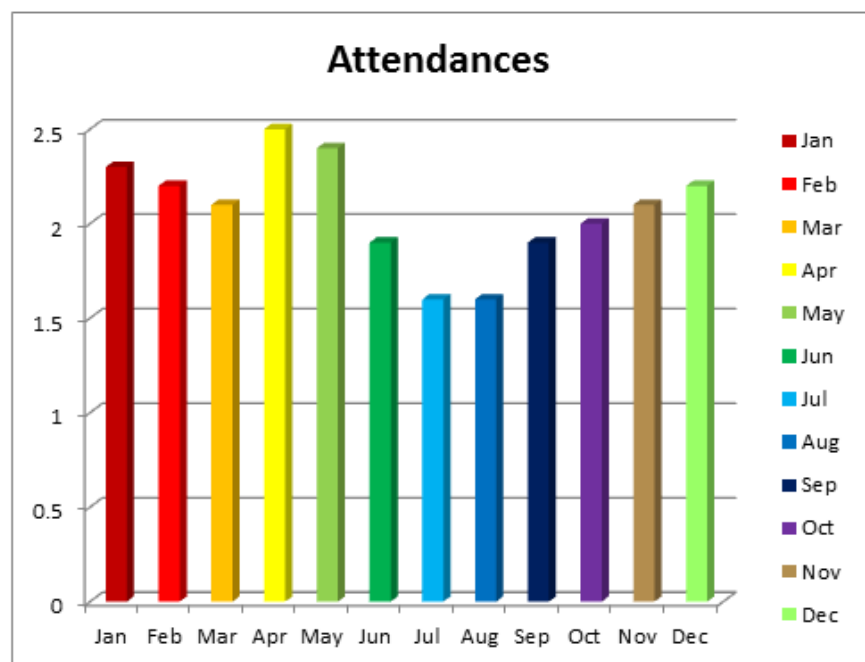
Date/time functions
General functions
Math functions
Statistical functions
String functions
Trigonometric functions

Other

Charts and graphs
Goal seek

Bar-chart

Month	Attendances
Jan	2.3
Feb	2.2
Mar	2.1
Apr	2.5
May	2.4
Jun	1.9
Jul	1.6
Aug	1.6
Sep	1.9
Oct	2
Nov	2.1
Dec	2.2



Pie-chart

Party	Votes
Democrats	3.7
Green Party	2.2
Republicans	3.1
Radicals	0.3
Conservatives	3.2
Centre	2.8

