

COMP1022Q
Introduction to Computing with Excel VBA

Excel Formula Loops

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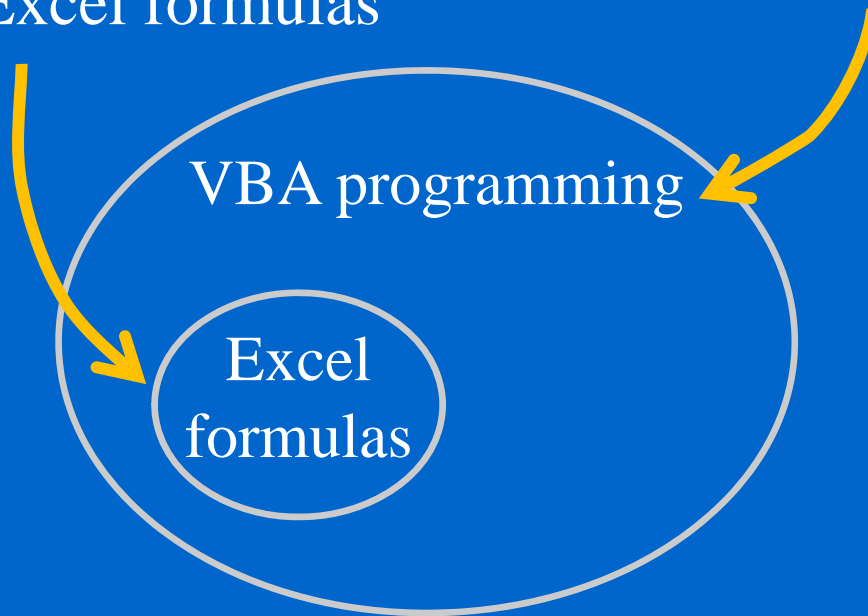
This Presentation

- In this presentation, we will very briefly look at loops in Excel formulas:
 - Loops in Excel
 - Examples of Excel formula loops
 - Lack of control
 - The result of a formula loop

Loops in Excel

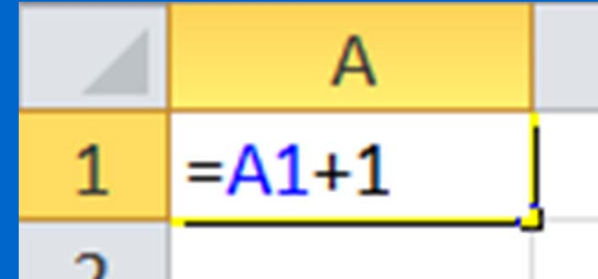


- In Excel formulas, if you have a loop it usually means a mistake has been made
- We usually never use loops in Excel formulas
- As you know, in VBA we can control everything about the loop (when it starts, when it ends, what it does)



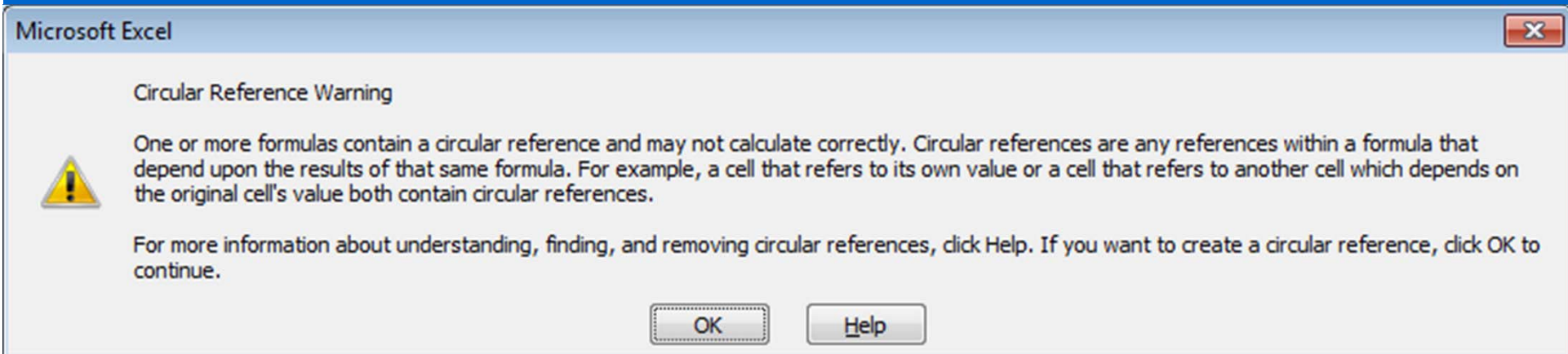
An Example Excel Formula Loop

- This formula refers to itself:
- As soon as you enter this formula Excel realises the answer can never be correctly calculated, because the formula refers to itself
- This makes a ‘circle’ (a loop), and so Excel shows a ‘Circular Reference Warning’:



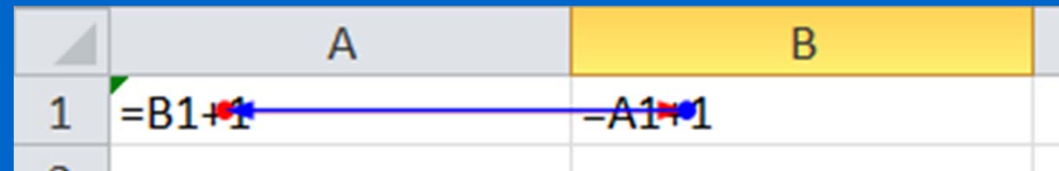
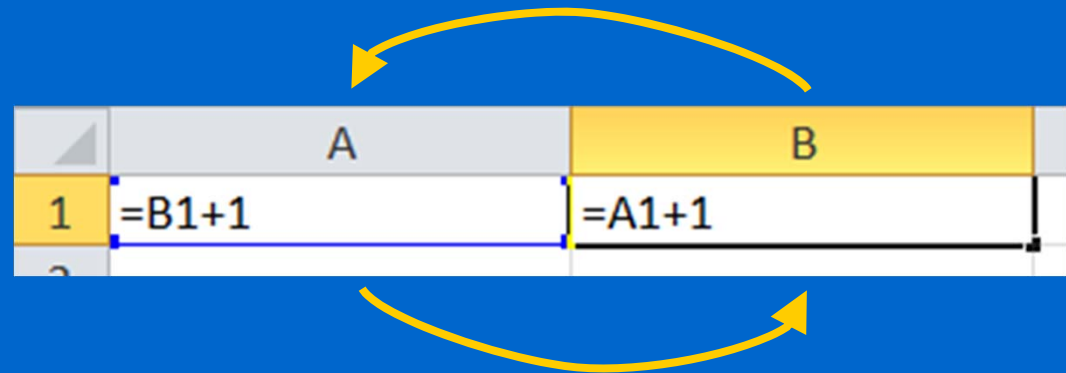
The image shows a small portion of an Excel spreadsheet. The column header is 'A'. The row header is '1'. The cell A1 contains the formula `=A1+1`. A yellow border highlights the cell, and a small black square (the fill handle) is visible at the bottom right corner of the cell.

	A
1	<code>=A1+1</code>



Another Example Loop

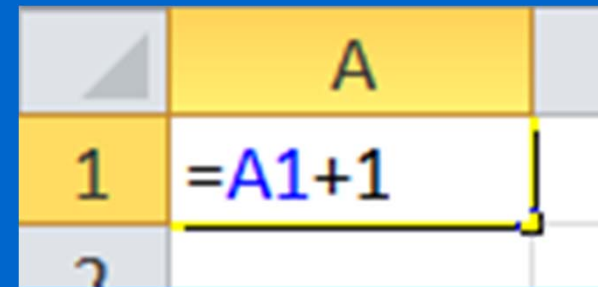
- In this example one cell refers to a second cell – but that cell refers to the first cell...
- So this is another circular reference



- Sometimes Excel shows arrow(s) to indicate a loop, in addition to showing the Circular Reference Warning

Lack of Control

- In this example we haven't controlled the start (i.e. what's the first value of A1?), and we haven't controlled the end (i.e. what's the last value of A1?)
- As you know from VBA loops, when you have a loop you need to control it carefully
- We can't do that with cell formula loops

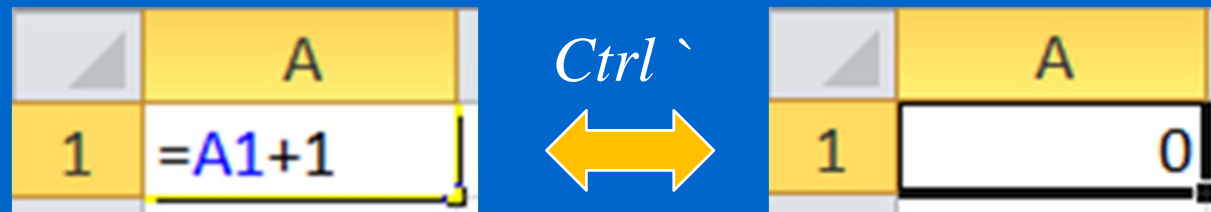


The image shows a small portion of an Excel spreadsheet. The top row has a yellow header cell labeled 'A'. Below it, the first row of data has a yellow cell containing the number '1' and a white cell containing the formula '=A1+1'. The second row of data has a yellow cell containing the number '2' and an empty white cell. A yellow selection bar is visible around the first row of data, and a small black square (the fill handle) is at the bottom right of the cell containing the formula.

	A
1	=A1+1
2	

The Result Of A Formula Loop

- Be careful not to make a loop when you write formulas
- When it sees a loop, Excel shows the 'Circular Reference Warning' – but it does give a result!
- In Excel, any circular reference in a formula produces zero. For example:



- However, this is not particularly helpful
- Avoid formula loops as much as possible!