COMP1022Q

Introduction to Computing with Excel VBA

Working with a Range of Cells

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Outcomes

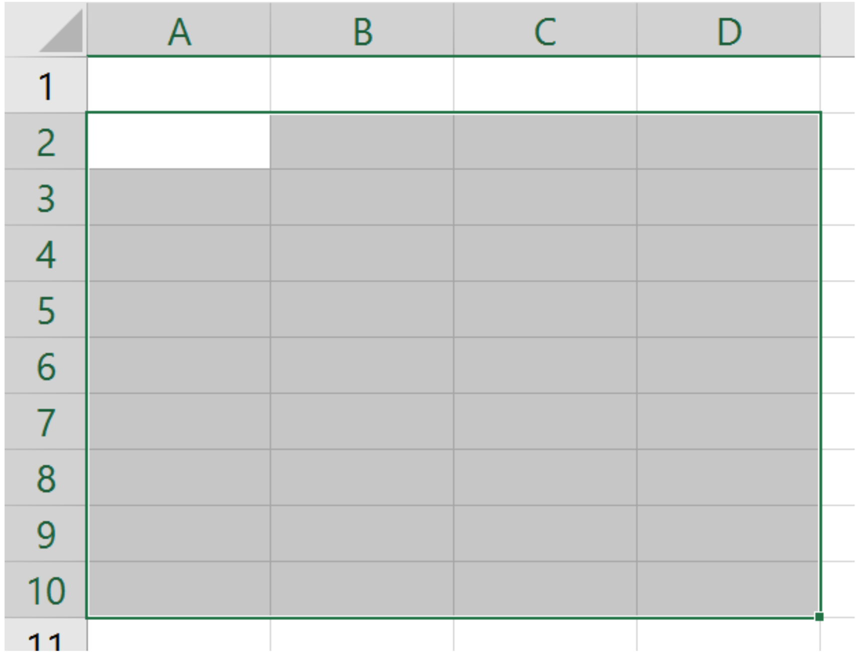
- After completing this presentation, you are expected to be able to:
  1. Read the location and size of a range of cells
  2. Use `ActiveCell` and `Selection` to get information about the currently selected cells

Using a Range of Cells

- You can put a range of cells in a variable like this:

```
Dim MyCells As Range
Set MyCells = Range("A2:D10")
```

- Then you can get lots of useful information from the variable (`MyCells`, or whatever the variable name is) such as the width and height of the area



Useful Properties of the Range Object

- Here’s some of the things you can get:

MyCells.Row

- The topmost row of the region

MyCells.Column

- The leftmost column of the region

MyCells.Rows.Count

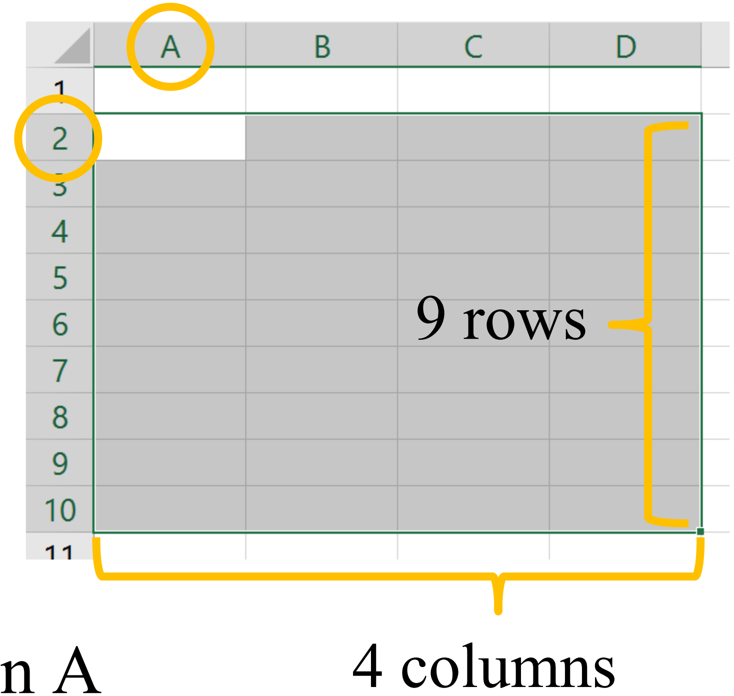
- The number of selected rows

MyCells.Columns.Count

- The number of selected columns

Example Results

```
Dim MyCells As Range
Set MyCells = _
    Range("A2:D10")
```



- `MyCells.Row = 2`
  - The range object starts at row 2
- `MyCells.Column = 1`
  - The range object starts at column A
- `MyCells.Rows.Count = 9`
  - The range object contains 9 rows (2 to 10)
- `MyCells.Columns.Count = 4`
  - The range object contains 4 columns (A to D)

Using ActiveCell

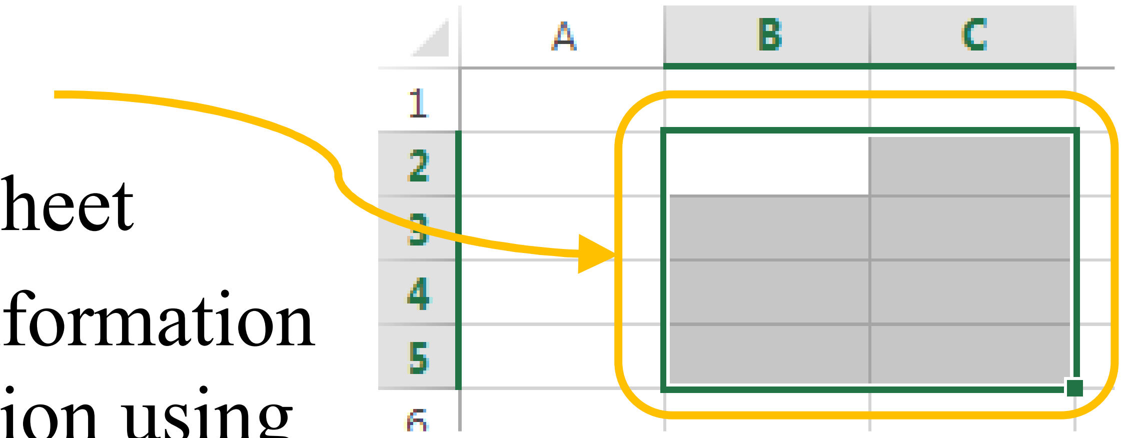
- In VBA, you can use `ActiveCell` to get the currently selected cell
- For example, you can read the content of the currently selected cell using this code:

```
Dim CurrentValue As String
CurrentValue = ActiveCell.Value
```

- However, `ActiveCell` represents a single cell only
- If you select more than one cell you will not be able to use `ActiveCell` to get all of them

Rectangular Selection of Cells

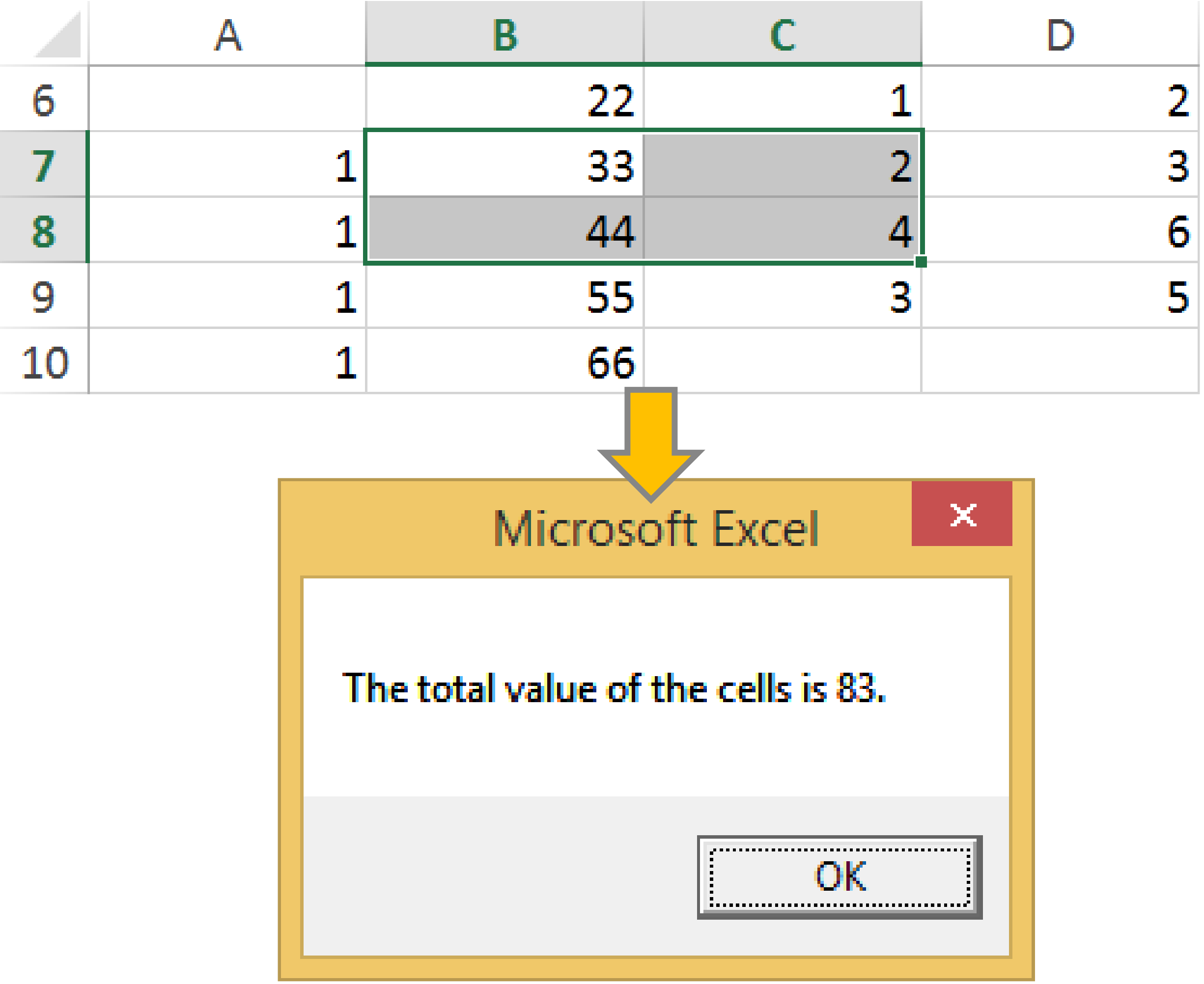
- You can select a rectangular region of cells in a worksheet



- You can get the information of the selected region using `Selection`, which is a Range object with the currently selected cells
- Then, to get information about the selected cells, you can use the same techniques we looked at a couple of slides ago

Reading the Values in a Selection 1/2

- For example, you can use a nested loop to sum the values of all selected cells and show the result in a message box:



	A	B	C	D
6		22	1	2
7	1	33	2	3
8	1	44	4	6
9	1	55	3	5
10	1	66		

Microsoft Excel

The total value of the cells is 83.

Reading the Values in a Selection 2/2

- Here is the code:

```
Sum = 0
For Row = Selection.Row To _
          Selection.Row +  _
          Selection.Rows.Count - 1

    For Col = Selection.Column To _
              Selection.Column +  _
              Selection.Columns.Count - 1

        Sum = Sum + Cells(Row, Col).Value
    Next Col
Next Row

MsgBox "The total value of the cells is " & _
       Sum & "."
```

Loop through the rows

Loop through the columns

Using a For Each Loop

- Alternatively, you can use a for each loop:

```
Sum = 0
For Each Cell In Selection
    Sum = Sum + Cell.Value
Next Cell
```

Loop through all the selected cells

```
MsgBox "The total value of the cells is " & _
       Sum & "."
```

- The code looks much simpler now although you do not have the row and column values like before (but you can use `Cell.Row` and `Cell.Column`)