

COMP1022Q
Introduction to Computing with Excel VBA

Using Excel Objects

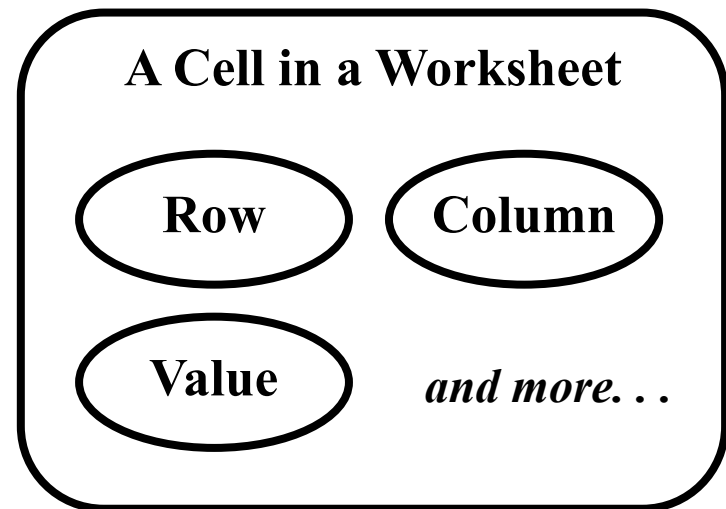
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Outcomes

- After completing this presentation, you are expected to be able to:
 1. Understand what an Excel object is
 2. Put an Excel object in a variable using the Set keyword

Excel Objects

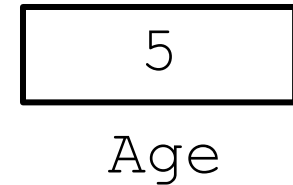
- You have used VBA to work with cells
- You can change the content of a cell and read things from a cell
- You can think of a cell as a collection of things, which we call them *properties*
- A cell is an example of an *Excel object*



Putting Excel Objects in Variables

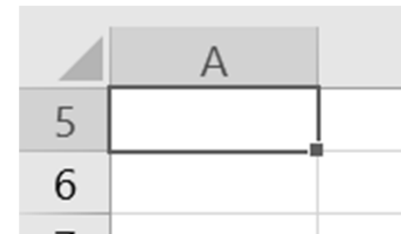
- Simple values such as numbers and strings can be put in a variable simply using the equal sign, for example:

`Age = 5`



- To put an Excel **object** in a variable, you will need to additionally use the `Set` keyword at the start of the line, like this:

`Set MyCell = Range("A5")` }

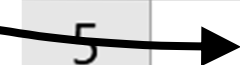


After this code, everything in the cell object can be accessed via `MyCell`

Some Examples of Using a Cell 1/2

- After this line of code:

```
Set MyCell = Range("A5")
```



	A
5	

- You can do things like these:

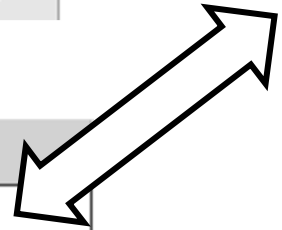
```
' Put Hello in the cell  
MyCell.Value = "Hello"
```

	A
5	Hello

```
' Put a formula in the cell  
MyCell.Formula = "=2+2"
```

	A
5	4

Here is the formula
in the cell:



	A
5	=2+2

Some Examples of Using a Cell 2/2

- And these:

A 2x2 grid representing an Excel cell. The top-left cell contains a small gray triangle. The top-right cell contains the letter 'A'. The bottom-left cell contains the number '5'. The bottom-right cell is solid black.

	A
5	

' Change to red

```
MyCell.Interior.ColorIndex = 3
```

' Copy the cell

```
MyCell.Copy
```

} This is equivalent to you selecting cell A5 and then pressing *Ctrl-C*

' Get you the row number (i.e. 5)

```
MyCell.Row
```

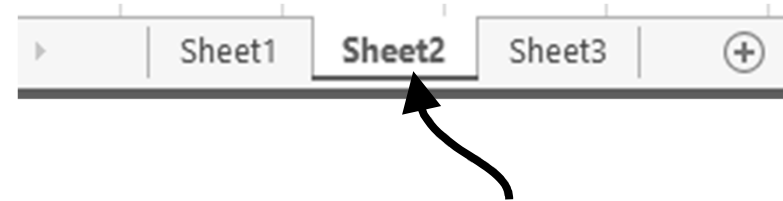
' Get you the column number (i.e. 1)

```
MyCell.Column
```

Two Other Excel Objects in VBA

- In addition to cells, here are two other common objects and how you can access everything in them:

- The Worksheet object,
i.e. an Excel worksheet

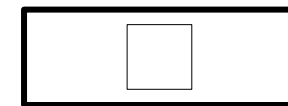
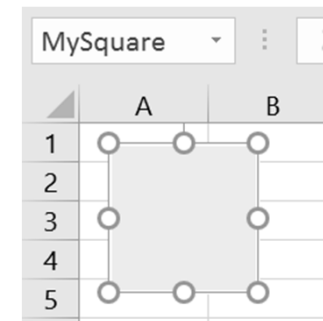


```
Set MyWorksheet = Worksheets("Sheet2")
```

- The Shape Object, which you will
see later in the course

```
Set Square = _
```

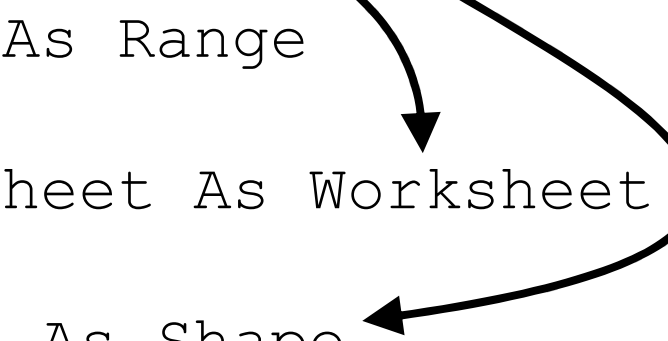
```
ActiveSheet.Shapes("MySquare")
```



Square

Variable Types for Objects

- When you store an Excel object in a variable, the variable should have the correct data type

- Range, i.e. cells `Dim MyCell As Range`
 - Worksheets `Dim MyWorksheet As Worksheet`
 - Shapes `Dim MyShape As Shape`
- 
- A diagram consisting of three curved arrows. The first arrow starts from the underlined text 'data type' and points down to the word 'Range' in the first list item. The second arrow starts from the same point and points down to the word 'Worksheet' in the second list item. The third arrow starts from the same point and points down to the word 'Shape' in the third list item.

Using Things in an Object

- You can use one of the things in an object by using a dot (.) and the name of the thing
- For example, to put something in a cell, you use the `Value` property of the range object, like this:

```
Range("D2").Value = "I am D2!"
```

- Similarly, to get something from a cell you do something like this:

```
Content = Range("D2").Value
```