

COMP1022Q
Introduction to Computing with Excel VBA

Using Excel Objects

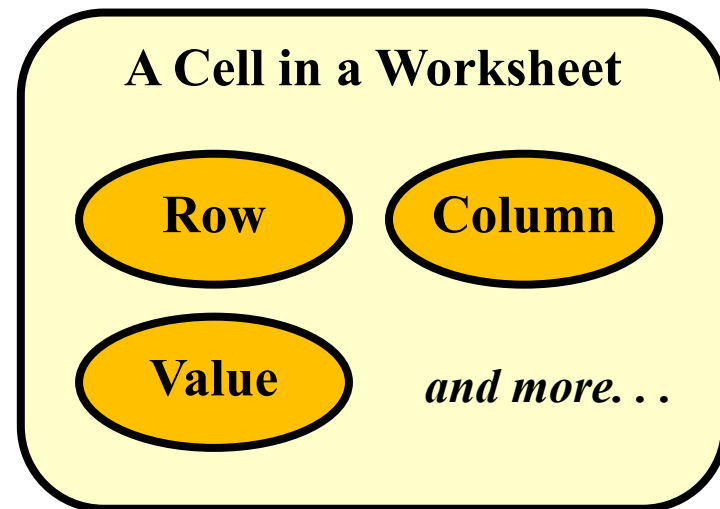
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Outcomes

- 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

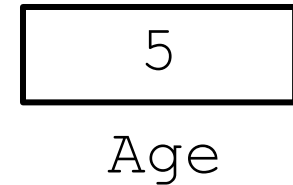
- You have used VBA to work with cells
- You can change the content of a cell and read things from a cell
- You can think of a cell as a collection of things, which we call them *properties*
- A cell is an example of an *Excel object*



Putting Excel Objects in Variables

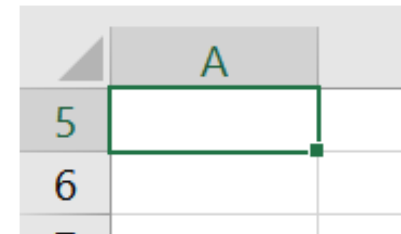
- Simple values such as numbers and strings can be put in a variable simply using the equal sign, for example:

`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")` }

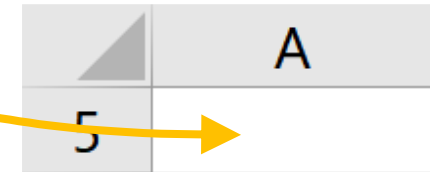


After this code, everything in the cell object can be accessed via `MyCell`

Some Examples of Using a Cell 1/2

- After this line of code:

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



	A
5	

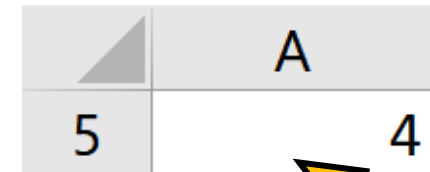
- You can do things like these:

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



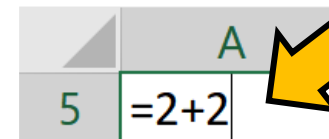
	A
5	Hello

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



	A	B
5	=2+2	4

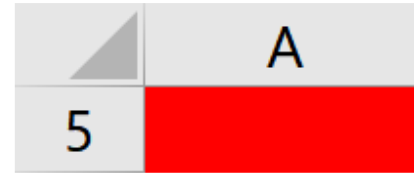
Here is the formula
in the cell:



	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 is light gray with a small gray triangle in the top-left corner. The top-right cell is light gray with the letter 'A'. The bottom-left cell is light gray with the number '5'. The bottom-right cell is solid red.

	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
```

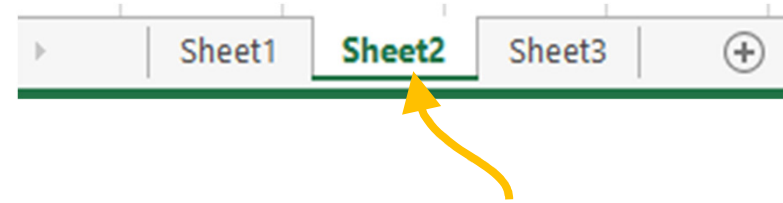
' Get you the column number (i.e. 1)

```
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

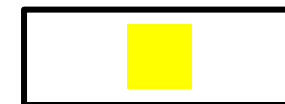
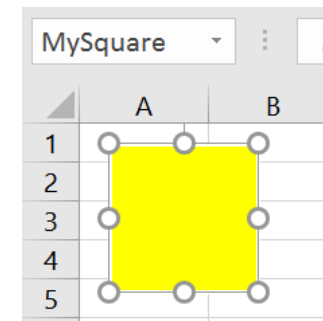


```
Set MyWorksheet = Worksheets("Sheet2")
```

- 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`
- 

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
```