Excel Assignment – 19

1. What are the data types used in VBA?

**Ans:** VBA data types can be segregated into two types

* Numeric Data Types

| Type | Storage | Range of Values |
| --- | --- | --- |
| Byte | 1 byte | 0 to 255 |
| Integer | 2 bytes | -32,768 to 32,767 |
| Long | 4 bytes | -2,147,483,648 to 2,147,483,648 |
| Single | 4 bytes | -3.402823E+38 to -1.401298E-45 for negative values 1.401298E-45 to 3.402823E+38 for positive values. |
| Double | 8 bytes | -1.79769313486232e+308 to -4.94065645841247E-324 for negative values 4.94065645841247E-324 to 1.79769313486232e+308 for positive values. |
| Currency | 8 bytes | -922,337,203,685,477.5808 to 922,337,203,685,477.5807 |
| Decimal | 12 bytes | +/- 79,228,162,514,264,337,593,543,950,335 if no decimal is use +/- 7.9228162514264337593543950335 (28 decimal places) |

* Non-numeric Data Types

| Data Type | Bytes Used | Range of Values |
| --- | --- | --- |
| String (fixed Length) | Length of string | 1 to 65,400 characters |
| String (Variable Length) | Length + 10 bytes | 0 to 2 billion characters |
| Boolean | 2 bytes | True or False |
| Date | 8 bytes | January 1, 100 to December 31, 9999 |
| Object | 4 bytes | Any embedded object |
| Variant(numeric) | 16 bytes | Any value as large as Double |
| Variant(text) | Length+22 bytes | Same as variable-length string |

1. What are variables and how do you declare them in VBA? What happens if you don’t declare a variable?

**Ans:** A variable is defined as storage in the computer memory that stores information to execute the VBA code. The type of data stored in the variable depends on the type of data of the variable. For example, if a user wants to store integers in the variable, the data type will be an integer.

We can implicitly declare a variable in Visual Basic simply by using it in an assignment statement. All variables that are implicitly declared are of type Variant. Variables of type Variant require more memory resources than most other variables.

If you don't declare a variable, then VBA treats it as a Variant data type that takes the largest space in memory (16 bytes to 22 bytes) when compared to other data types.

1. What is a range object in VBA? What is a worksheet object?

**Ans:** Range object - Range is a property in VBA that helps specify a particular cell, a range of cells, a row, a column, or a three-dimensional range. In the context of the Excel worksheet, the VBA range object includes a single cell or multiple cells spread across various rows and columns.

Worksheet object - the worksheet object represents a single worksheet that is a part of the workbook's worksheets (or sheets) collection. Using the worksheet object, you can refer to the worksheet in a VBA code, and refer to a worksheet you can also get access to the properties, methods, and events related to it.

1. What is the difference between worksheet and sheet in excel?

**Ans:** A worksheet is a just single-page data file that is generally created as a specific data file, while a spreadsheet is a whole program where the user can create a worksheet or workbook.

1. What is the difference between A1 reference style and R1C1 Reference style? What are the advantages and disadvantages of using R1C1 reference style?

**Ans:** In the A1 reference style, you have the column name as an alphabet and the row name as a number and when you select the A1 cell that means you are in column A and row 1. But in R1C1 both column and row are in numbers.

Advantages of using R1C1 reference style:

1. The R1C1 reference style is useful if you want to compute row and column positions in macros.
2. One of the main advantages of R1C1 references is that they make it easy to use relative references in formulas and functions. By using relative references, you can create formulas and functions that can be easily copied and pasted to other cells without having to manually adjust the cell references.
3. Another advantage of R1C1 references is that they provide a consistent way of referring to cells, regardless of their position on the worksheet. This can be particularly useful when working with large and complex worksheets, as it can help to reduce errors and make it easier to understand and maintain the formulas and functions.
4. R1C1 references can also be useful when working with macros and other automated processes in Excel. By using R1C1 references in your code, you can create more flexible and dynamic macros that can adapt to changes in the worksheet structure and layout.

Disadvantages of using R1C1 reference style:

1. ReferenceStyle is a property of the Excel Application, not of a workbook. So the setting remains in place until you change it. Default means how it's set when you install Excel.
2. More likely is that you opened up a spreadsheet (probably from another person) that was set to R1C1 style. Once it is opened, Excel assumes that you want that as a default, so from then on, all spreadsheets you open (even if they were A1 format) will convert to R1C1.
3. When is offset statement used for in VBA? Let’s suppose your current highlight cell is A1 in the below table. Using OFFSET statement, write a VBA code to highlight the cell with “Hello” written in it.

**Ans:** OFFSET is Used with Range Object in Excel VBA.In the context of the Excel worksheet, the VBA range object includes a single cell or multiple cells spread across various rows and columns. read more first. Then, from that range object, we can use the OFFSET property.

VBA code to highlight the cell with “Hello”:

Sub FormatTotals()

Dim r As Range, GCell As Range

For Each r In Range("A1:D6")

If InStr(r.Value2, "Hello") Then

Set GCell = r.Offset(0, 0)

GCell.Borders.Weight = xlThick

GCell.Interior.ThemeColor = xlThemeColorAccent5

GCell.Interior.TintAndShade = 0.399975585192419

End If

Next r

End Sub

|  |  |  |  |
| --- | --- | --- | --- |
| Sr No. | A | B | C |
| 1 | 25 | 354 | 362 |
| 2 | 36 | 6897 | 962 |
| 3 | 85 | 85 | Hello |
| 4 | 96 | 365 | 56 |
| 5 | 75 | 62 | 2662 |