# VBA USER DEFINED ARRAYS

## What is a Function?

A function is a group of reusable code which can be called anywhere in your program. This eliminates the need of writing same code over and over again. This will enable programmers to divide a big program into a number of small and manageable functions.

Apart from inbuilt Functions, VBA allows us to write user-defined functions as well. This section will explain you how to write your own functions in VBA.

## Function Definition

A VBA function can have an optional return statement. This is required if you want to return a value from a function.

For example, you can pass two numbers in a function and then you can expect from the function to return their multiplication in your calling program.

**NOTE :** A function can return multiple values separated by comma as an array assigned to the function name itself.

Before we use a function, we need to define that particular function. The most common way to define a function in VBA is by using the **Function** keyword, followed by a unique function name and it may or may not carry a list of parameters and a statement with a **End Function** keyword, which indicates the end of the function. The basic syntax is shown below:

## Syntax

Add a button and add the below function

```
Function Functionname(parameter-list)
   statement 1
   statement 2
   statement 3
   .......
   statement n
End Function
```
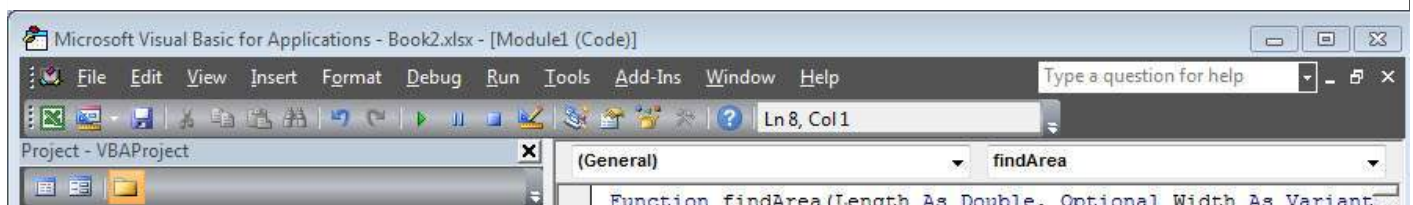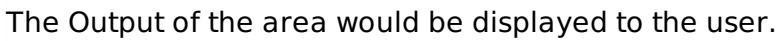
## Example

Add the below function which returns the area. Note that a value/values can be returned with the function name itself.

```
Function findArea(Length As Double, Optional Width As Variant)
    If IsMissing(Width) Then
        findArea = Length * Length
    Else
        findArea = Length * Width
    End If
End Function
```

## Calling a Function

To invoke a function, call the function using function name as shown below:

```
            If IsMissing(Width) Then
                findArea = Length * Length
            Else
                findArea = Length * Width
            End If
    End Function
```

| Width | Length | Area |
|-------|--------|------|
| 23 | 6 | =findArea(C6,D6) |

The Output of the area would be displayed to the user.

| Width | Length | Area |
|-------|--------|------|
| 23 | 6 | 138 |