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| **Creation of a Macro Reference File for Excel VBA Functions** |

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# Introduction and Purpose

The [www.brytechsolutons.co.uk/designtools](http://www.brytechsolutons.co.uk/designtools) website provides several excel Visual Basic for Applications (VBA) functions which can be used to calculate various parameters. These macros can be added into the individual excel spreadsheets in which they are being used. However, a reference “xla” file can be created, where all the VBA functions are placed, and they can then be used in any excel spreadsheet which references the “xla” file. This method means that spreadsheets can be saved as “xls” files instead of “xlm”, macro enabled files, but also makes maintenance and updating of functions much easier to control.

The purpose of this design guide is to explain how to create and use a reference “xla” file.

# Creating a VBA Function

There are different ways to open the VBA editor in excel, but the one I normally use is as follows:

## Ensure the Developer Tab is Displayed

Microsoft change the menu structure from time to time. This procedure is written based on Excel for Microsoft 365 in June 2023.

Open a spreadsheet. Right click in the ribbon area and then select “Customize the Ribbon…”

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Make sure the Developer check-box is ticked.

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You will now be able to click on Developer in the Ribbon, and then select “Visual Basic”.

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You should now have a screen that looks something like this, where (Book1) is the name of the spreadsheet – if you’ve already saved this spreadsheet, then its filename will appear instead of (Book1):

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Right click on VBAProject(Book1) and select Insert Module

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Copy and paste the following text into the main window (to the right of the one with VBAProject(Book1)):

Function MultiplyByTwo(x)

MultiplyByTwo = x \* 2

End Function

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Now return to excel and select File – Save As from the main menu. Give your function file a name and save it as an “Excel Add-in (\*.xlam)” in a suitable location (in this case, I have called the file “My Excel Function File” and it is saved in the default location which is “c:>Users>Me>AppData>Roaming>Microsoft>AddIns”

Note that you can have more than one Module in a project – this is a useful way of filing macro functions of different types.

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Now open any spreadsheet (or a new spreadsheet) and open visual basic again.

Select Tools – References:

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Then select Browse from the window that opens and navigate to your new function file. You need to pick “All Files (\*.\*)” from the drop down list at the bottom right. When you have found your new function file, select Open.

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Return to the spreadsheet (you can close the visual basic window or leave it open, it doesn’t matter). In any cell, type “=MultiplyByTwo(4)”, and you should get a result of 8. This function is now available in any spreadsheet when you reference your function file.

I use the EXSTART facility so that my functions are available whenever I open excel on my computer. In my current version of software, this is located as indicated in the address bar below. “Tony’s Excel Start-up File” is a blank workbook that includes a reference to “Tonys Macros.xlam” as described above. I also use “Tony’s Excel Start-up File” to store customised formats that I like to use in all spreadsheets.

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