Microsoft Visual Basic for Applications

Create Custom Formulae

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Excel VBA | Create Custom Formulae

Summary

In this short tutorial, we will create a custom formula or function using Visual Basic for applications.

Sometimes at work we need to calculate specific metrics, KPIs or just simple percentages.

Having these calculations as custom functions can save some time, and storing them in a library in the company's network makes it shareable to everyone and very easy to maintain.

I use Mac but the code works on Windows as well.

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About Functions

We also know them colloquially as formulas. However, a Formula is an equation designed by a user in Excel, while a Function is a predefined calculation in the spreadsheet application.

For example: =2+2 is a formula.

Whereas =SUM(A2,A3) is a function.

We are going to create our own functions just as we would use SUM, COUNT, VLOOKUP, etc.

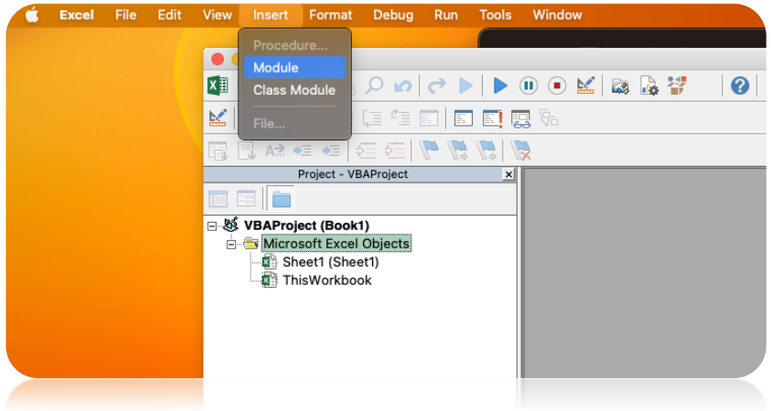
To demonstrate how to do this, we are going to create a Gross Margin function, and a Gross Margin Percentage function.

Instructions

You can achieve this by following these steps:

Step 1. Open Visual Basic by pressing alt + F8 or going to the Developer menu if visible, and clicking on Visual Basic.

Step 2. Add a new module if there is not one already.



Step 3. Paste the following code:

```
Public Function CWGM(RetailSales As Long, RetailSalesAtCost As Long) As Double

'     Calculates gross margin

      On Error Resume Next

            CWGM = RetailSales - RetailSalesAtCost

      On Error GoTo 0
```

```
End Function


Public Function CWGMPercentage(GMDollars As Long, Sales As Long) As Double
'     Calculates gross margin percentage
      On Error Resume Next
      If GMDollars = 0 Or Sales = 0 Then
            CWGMPercentage = 0
      Else
            CWGMPercentage = GMDollars / Sales
      End If
      On Error GoTo 0
End Function
```

Step 4. Close Visual Basic.

Step 5. In Excel, cell A1, enter the sample table below:

Retail Sales	Retail Sales At Cost	Gross Margin $	Gross Margin %
1500	1000		
2750	2290		
1200	900		

Step 6. On cell C2, type =CW and select CWGM, then select cells A2 for GMDollars, and B2 for GMSales, then copy the function down to C4.

Step 7. On cell D2, type =CW and select CWGMPercentage, then select cells A2 for GMDollars, and B2 for GMSales, then copy the function down to C4.

Step 8. To save the file, save it as .xlsm or better, .xlsb, since it has a VBA module in it.

How the Functions Work

Creating a Public Function in VBA makes it callable in Excel cells.

Let's take Gross margin for example.

After the name CWGM , in brackets, we declare the 2 parameters to be used in the function, which are retail sales and sales at cost.

We tell VBA that On Error, resume next, which means to ignore any errors and keep going without crashing. After this check, the real formula performs the calculation, which is (Retail Sales – Retail Sales At Cost).

In the case of CWGMPercentage, we follow the same procedure as before, but this time, we add an IF, THEN, ELSE statement to check if the divisor is zero, which would also return another error.

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