

# EXCEL VBA ( MACRO PROGRAMMING ) LEVEL 1

## 21-22 SEPTEMBER 2015

### 9.00AM-5.00PM

### MENARA PJ@AMCORP PETALING JAYA

#### What is a Macro?

While VBA VBA, which stands for *Visual Basic for Applications*, is a programming language developed by Microsoft is the language which Excel speaks (and understands),

Macro is like a paragraph.

In other words, **a Macro is a set of instructions given to Excel to accomplish something.**

For example, this is a macro for generating a report (written in plain English, not VBA)

1. Open data.xls
2. Take last 30 days of data
3. Prepare a bar chart
4. Copy the chart to a new workbook
5. Save the workbook as a PDF
6. Email it to boss

When we **execute or run** this macro, we end up ***generating the report & mailing it.***

People use Excel for thousands of different tasks. a few examples:

- Keeping lists of things, such as customer names, students' grades, or holiday gift ideas
- Budgeting and forecasting
- Analyzing scientific data
- Creating invoices and other forms
- Developing charts

.

**One thing every user of MS Excel has in common is the *need to automate some aspect of Excel*. That is what VBA is all about.**

For example, you might create a VBA program to format and print your month-end sales report.

After developing and testing the program, you can execute the macro with a single command, causing Excel to automatically perform many time-consuming procedures. Rather than struggle through a tedious sequence of commands, you can grab a cup of coffee and let your computer do the work .

Here are some brief descriptions of some common uses for VBA macros.

## **Inserting a text string**

If you often need to enter your company name into worksheets, you can create a macro to do the typing for you. You can extend this concept as far as you like. For example, you might develop a macro that automatically types a list of all salespeople who work for your company.

## **Automating a task you perform frequently**

Assume you're a sales manager and need to prepare a month-end sales report to keep your boss happy. If the task is straightforward, you can develop a VBA program to do it for you. Your boss will be impressed by the consistently high quality of your reports. 😊

## **Automating repetitive operations**

If you need to perform the same action on, say, 12 different Excel workbooks, you can record a macro while you perform the task on the first workbook and then let the macro repeat your action on the other workbooks. The nice thing about this is that Excel never complains about being bored. Excel's macro recorder is similar to recording sound on a tape recorder. But it doesn't require a microphone.

## **Creating a custom command**

Do you often issue the same sequence of Excel menu commands? If so, you can save precious time by developing a macro that combines these commands into a single custom command, which you can execute with a single keystroke or button click.

## Creating a custom toolbar button

You can customize the Excel toolbars with your own buttons that execute the macros you write. Office workers tend to be very impressed by this sort of thing.

## Creating a custom menu command

You can also customize Excel's menus with your own commands that execute macros you write. Office workers are even more impressed by this.

## Creating a simplified front end

In almost any office, you can find lots of people who don't really understand how to use computers. (Sound familiar?) Using VBA, you can make it easy for these inexperienced users to perform some useful work. For example, you can set up a foolproof data-entry template so you don't have to waste *your* time doing mundane work.

## Developing new worksheet functions

Although Excel includes numerous built-in functions (such as SUM and AVERAGE), you can create *custom* worksheet functions that can greatly simplify your formulas. You'll be surprised by how easy this is. Even better, the Insert Function dialog box displays your custom functions, making them appear built in. Very snazzy stuff.

## Creating complete, macro-driven applications

You can use VBA to create large-scale applications complete with custom dialog boxes, onscreen help, and lots of other functions.

## Which are the uses of macros vba ?

Though macros vba we can create many applications that realise calculations automatically and we can also obtain results in few seconds.

There are some examples in which macros vba are used..

## Macros Vba with Excel.



Creation of new functions as the function of "code " which converts alphanumeric digits of drawings based on codification bars.

Automate repetitive tasks - accomplishment of automatic reports, connection with data bases and other programmes.

Resolution of complex and iterative calculations.

Creation of programmes, like documentary managers, planning software.

### Example macro vba in excel - automatic report.

The automate tasks with **macros vba in Excel** grants numerous advantages to us: the eradication of mistakes of human calculations, saving of working time, resolution of complex calculations, effectiveness, and efficiency.

In order to observe the numerous advantages that macros vba in excel provides , we are going to give a simple example of repetitive tasks: imagine that every Monday when arriving at work, you must make a report about the current prices and codes of products of your company, to do this we have a report with the following format:

## Automatic Report with Excel Macros.

In the first row we have the name of the product, in the low row, the reference of the product, the later row shows the price and, finally, the following row is white. Like this, up to 500 products.

	A	B	C	D
1	<b>MACRO EXAMPLE - AUTOMATIC</b>			
2				
3	PRODUCT 1	←	PRODUCT NAME	
4	REF : 452_KL	←	REFERENCE	
5	\$ 44,10	←	PRICE	
6				
7	PRODUCT 2			
8	REF : 598_EW			
9	\$ 73,10			
10				

**Data Excel Sheet.**

The report presented has to group all the products in just one column, represented in the side columns the reference and the price of each product.

	A	B	C
1	NAME		
2	PRODUCT	REFERENCE	PRICE
3	PRODUCT 1	REF : 452_KL	\$ 44,10
4	PRODUCT 2	REF : 598_EW	\$ 73,10
5	PRODUCT 3	REF : 1043_PO	\$ 65,50
6	PRODUCT 4	REF : 1043_PO	\$ 16,90
7	PRODUCT 5	REF : 581_EW	\$ 40,30
8	PRODUCT 6	REF : 523_KL	\$ 24,80
9	PRODUCT 7	REF : 946_OT	\$ 41,00
10	PRODUCT 8	REF : 43_AL	\$ 38,20
11	PRODUCT 9	REF : 1070_PO	\$ 75,30
12	PRODUCT 10	REF : 394_HY	\$ 59,30
13	PRODUCT 11	REF : 158_CF	\$ 77,80
14	PRODUCT 12	REF : 779_IS	\$ 41,10

**Final data Excel Sheet .**

Analysing the process, if this work would be done manually you would have to follow these steps:

1. Select the reference of the product.
2. Cut the reference.
3. Stick it in the following cell
4. Select the price of the product

5. Cut the price
6. Stick it in the continuous cell
7. Select the rows that are in target.
8. Erase the rows

Each step supposes a click in the mouse, assuming that in each operation we invert an average of 3 seconds; we obtain the format, by each product we took 24 seconds, by the 500 products we would obtain 3 hours and 20 minutes without stopping to make these steps.

If we execute the macro in just 5 seconds we ensure this task does not have any mistake meanwhile if do it by hand it would be wrong.

**If instead of having 500 products we have 5.000, 20.000 or even 50.000 we can not do it by hand, because it will take us many weeks or even months to writhe the report. Thanks to the programming with macros these kind of tasks can be realised, and they will turn into automate tasks letting us spending our time in other things.**

### **Automatic reports about stocks and warehouse managements - Macro Excel Vba.**

To make a good management of the stock we have to know the current stock of our products, as well as making some analysis that allow us having always a minimal stock to satisfy our clients. The Macro Excel VBA Management of stocks and warehouses, calculate automatically for us which reports are useful when managing any warehouse, in order to access to this reports we make click in the button of " REPORTS " .



# **Level 1 - Excel VBA (Macro Programming)**

## **21-22 September 2015**

### **2-day workshop**

#### **Introduction**

This course is designed for users new to Excel macros, with little or no programming experience. In this training, you will learn how to apply three basic constructs: sequence, selection and iteration, into your problems; and create VBA programs to interact with multiple worksheets and workbooks. Microsoft Excel VBA (Macro) is a programming language attached with Excel. It help you create automated spreadsheets for your repetitive tasks such as:

- generating dynamic reports based on your changing statistics;
- customizing tools and integrating them into the spreadsheet;
- simplifying complex tasks that needs to be performed regularly.

#### **Course pre-requisites**

Participants enrolling in this course should have basics knowledge on Excel.

#### **DAY 1**

##### **Module 1 – Macro Recording Techniques**

#### **Course Outline**

- Opening And Closing The Editor;
- Working With The Project Explorer;
- Working With The Properties

This module provides an overview of MS Excel Macro recording, examining and testing MS Excel Macro. Participants are except to learn the correct techniques about macro recording and assigning macros to buttons.



## **Module 2 – Familiar with the Visual Basic Environment**

This module aims is to introduce several debugging tools to the participants which can help them to identify compile-time, run-time and logical errors. Break Mode, Instant Watch and Stepping Through Code will be introduced in this module.

## **Module 3 – Debugging tools**

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## **Module 4 – Commands to Interact with cells, worksheets and detect last row and column in a sheet**

This module will includes the commands use to interact with cells and worksheets. This module also shows the commands to detect for the last record. Participants are requires to write some VBA programs to solve some problems.

## **Module 5 – Control Statements (Selection and Looping)**

This module shows the participants how to create code loops to iterate through sheets in a workbook or cells in a range, in order to process each item in them in similar ways.

## **Module 6 – Error Handling**

The module shares with the participants how to write error-handling code to trap errors.

## **Module 7 – Commands for cells formatting**

This module shows the commands for cell formatting which can uses to highlights the desire cells using cell colors or font colors and etc.

## **DAY 2**

### **Module 8 – Variables Declaration**

This module shows participants the correct concepts of writing programs. Variable declaration, variable types and the scope of variables will be covered here.

### **Module 9 – Commands to interact with workbook(s)**

Participants will learn how to create codes to interact with the workbook(s) such as:

- Retrieving meaningful information from a workbook;
- Storing information into a workbook

### **Module 10 – Understanding some daily tasks**

Participants will be shown with some samples daily task

**Training Venue: Menara PJ, Pusat Perdagangan AmCorp, P.Jaya**  
**For more information, kindly contact Ms Kim Tan at 019 - 2569053,**  
**or email [kim@empowering1.com](mailto:kim@empowering1.com)**