Review on Office Excel for Macros

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Abstract— **A Macro is nothing but Macroinstruction in Computer Science it is a rule or pattern With** Excel VBA **you can automate tasks in Excel by writing so called macros. In this chapter, learn how to create a simple** macro**, which will be executed after clicking on a command button. First, turn on the Developer tab. Macros are used to make a sequence of computing instructions available to the programmer as a single program statement, making the programming task less tedious and less error-prone. Nowhere was the aspect of "Data Entry & Data Coding" taught to the students. In a bid to overcome these problems, I started looking for a solution and finally decided to integrate Microsoft Excel in the syllabus of Research Methodology. The best analyses incorporate all the available data, not just one part of it. As businesses gather more and more transactional and engineering data, they need a coherent solution to access and analyze all the data, no matter how it is stored.**

Keywords:- Macros, VBA, Excel, Office.

I INTRODUCTION

A macro is a piece of programming code that runs in Excel environment and helps automate routine tasks. In a layman's language, a macro is a recording of your routine steps in Excel that you can replay using a single button.VBA is the acronym for Visual Basic for Applications. It is a programming language that Excel uses to record your steps as you perform routine tasks. You do not need to be a programmer or a very technical person to enjoy the benefits of macros in Excel. Excel has features that automatically generated the source code for you. Read the article on Vba for more details. Macros can be used to compromise your system by attackers. By default, they are disabled in excel. If you need to run macros, you will need to enable running macros and only run macros that you know come from a trusted source If you want to save macros, then you must save your workbook in a macro-enabled format *.xlsm. Let's say you work as a cashier for a water utility company. Some of the customers pay through the bank and at the end of the day, you are required to download the data from the bank and format it in a format that meets your business requirements. You can import the data into Excel and format. The following day you will be required to perform the same ritual. It will soon become boring and tedious. A macro is a tool that allows you to automate tasks and add functionality to your forms, reports, and controls. For example, if you add a command button to a form, you associate the button's OnClick event to a macro, and the macro contains the commands that you want the button to perform each time it is clicked.

Macro virus-

VBA has access to most Microsoft Windows system calls and executes when documents are opened. This makes it relatively easy to write computer viruses in VBA, commonly known as macro viruses. In the mid-to-late 1990s, this became one of the most common types of computer virus. However, during the late 1990s and to date, Microsofthas been patching and updating their programs. In addition, current anti-virus programs immediately counteract such attacks.

II STATISTICAL FEATURES OF MS-EXCEL

The choice of using MS-Excel was because most b-schools had purchased computers to set up their computer lab and these machines already had the OEM version of MS-Office installed on them. Microsoft Excel, first released in 1985 has grown into a comprehensive spreadsheet which can also double up as an analysis software, charting software, flat-form database and a full fledged programming environment (Wikipedia, 2009). The MS Excel 2003 version contains about 80 statistical functions. Besides allowing for calculation of descriptive statistics like measures of central tendency, dispersion, skewness and kurtosis, it also has functions to compute correlation, linear regression slope and intercept. It even allows testing of hypothesis by providing functions like chi-test, f-test, t-test and z-test. It has functions to calculate the probability distributions of the major distributions – beta, binomial, chi-square, exponential, f, gamma, hyper-geometric, log normal, negative binomial, normal, poisson, t and weibull. Another powerful feature is the provision of "array formulas". An array formula can perform multiple calculations and then return either a single result or multiple results. The usage of array formula's acts as a boon during analysis – especially when trying to tabulate raw data into frequency classes. MS Excel also provides "Data Analysis Tool Pack" which is available as an addon in all the versions of the software. This tool pack acts as a graphical user interface between the user and the data and provides some additional analysis facilities to the user. The additional analysis that can be done using the tool pack include – ANOVA, Exponential Smoothing, Fourier Analysis,

Histogram, Moving Average, Rank and Percentile, Multiple Regression and Sampling. Besides it allows quick calculation of Descriptive Analysis and of Z and T tests for hypothesis testing. The charting facility given by MS-Excel allows creation of basic charts and graphs along with insertion of trend lines and error bars in almost all of the charts. It allows the following trend lines – linear, logarithmic, polynomial, power exponential and moving average – along with the adjusted R2 values. Pivot Table's and Pivot Charts are another powerful features of MS Excel which allow us to generate 2x2 tables and charts to study relationships in an interactive way.

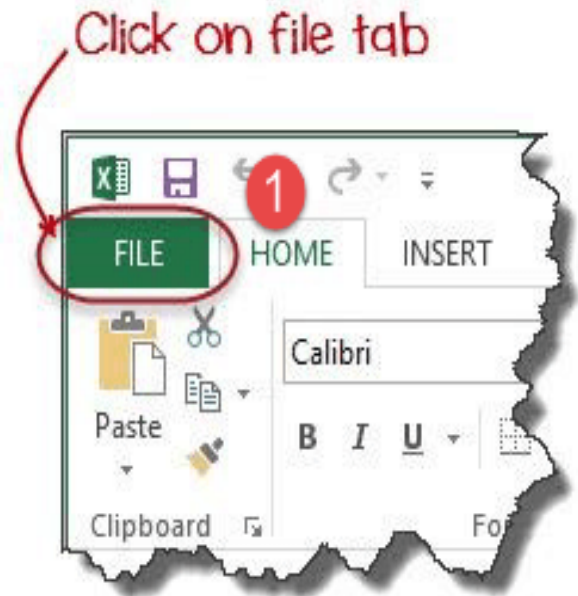### III AUTOMATING DIAGNOSTICS, ERROR CHECKING, AND OPTIMIZATION

Spreadsheet Inquire Organizations relying on spreadsheets for financial calculations, business analysis, and other mission-critical tasks need to know that their models are error-free. Spreadsheet Inquire, included with Office 2013 Professional Plus and Office 365 ProPlus, enables users to easily perform diagnostics, error checking, and optimization from Office Excel 2013 without specialized expertise. The tool can analyze workbooks, cells, and cell dependencies. Over 40 diagnostics are included such as formula errors, inconsistent formulas, invisible cells, hidden rows and columns, very hidden worksheets (hidden by macros), formulas referencing hidden or blank cells, formulas returning text, duplicate formulas, cells with conditional formatting or validation logic, warnings, and more. The results of such an analysis can be documented in a separate workbook and submitted with comments by end users. Whether analyzing existing spreadsheets or creating new ones, Spreadsheet Inquire helps users build quality into the models they rely on for important business functions. Quantitative data analysis tools in Excel Excel includes a large number of tools that can be used for general data analysis. Here our primary concern is those that are relevant to the statistical and related analysis techniques. Statistical functions Excel offers a broad range of built-in statistical functions. These are used to carry out specific data manipulation tasks, including statistical tests. An example is the AVERAGE 1 function that calculates the arithmetic mean of the cells in a specified range. It contains more extensive functions, including some useful inferential statistical tests. An example is the Descriptive Statistics routine that will generate a whole range of useful statistics in one go. The ToolPak is not available in Excel for Mac. Pivot tables provide a way of generating summaries of your data and organising data in ways that are more useful for particular tasks. They are extremely useful for creating contingency.
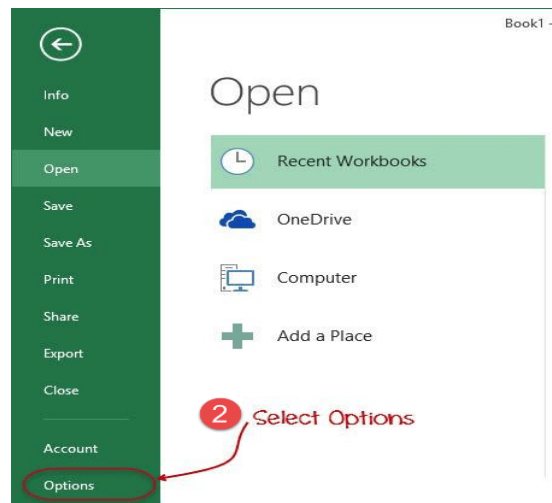
Figures and Tables
Enable Developer Option

To execute VBA program, you have to have access to developer option in Excel. Enable the developer option as shown below and pin it into your main ribbon in Excel.

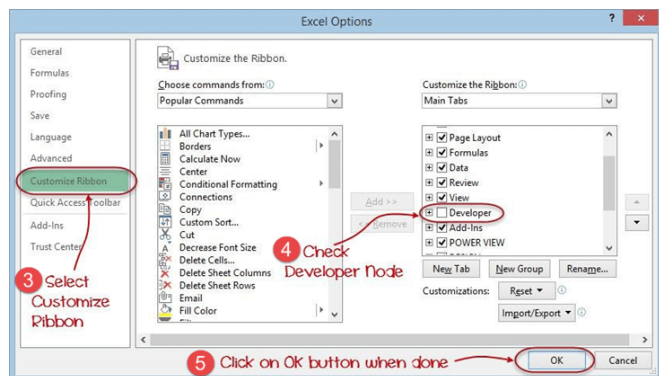**Step 1)** Go to main menu "FILE" and selection option "Options."

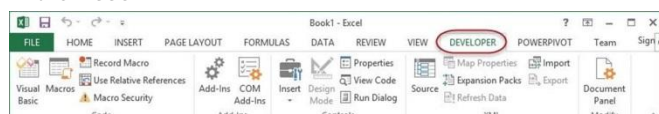**Step 2)** Select "Options" from the menu list as shown in screen shot below.

Step 3) Now another window will open, in that window do following things.

- Click on Customize Ribbon
- Mark the checker box for Developer option
- Click on OK button

Step 4) You will now be able to see the DEVELOPER tab in the ribbon

IV CONCLUSION

Macros simplify our work lives by automating most of the routine works that we do. Macros in Excel are powered by Visual Basic for Applications. The speed of the execution of the program is the major advantage of using a macro. It saves a lot of time that is spent by the compiler for invoking / calling the functions. It reduces the length of the program. The move toward greater automation of office tasks has been ongoing for the better part of the past three decades, but Microsoft's use of macros is one of the biggest moves toward eliminating needless keystrokes and boosting the productivity levels of administrative workers, accountants, and others who regularly deal with vast spreadsheets, large amounts of data, and chart-driven presentations. For business professionals who are just being introduced to the idea of a macro, there is much to learn and a great deal of information to understand about the benefits, drawbacks, and other considerations associated with this feature - all of which are outlined in this paper.

REFERENCES

[1] Use of Excel for Statistical Analysis. http://www.agresearch.co.nz/Science/Statistics/exceluse1.

[2] Wikipedia. (2009, September 15). Microsoft Excel. Retrieved September15, 2009, from http://en.wikipedia.org/w/index.php?title=Microsoft_Excel&oldid=314154110

[3] McCullough, B. D., &Heiser, a. A. (2008).On the accuracy of statistical procedures in Microsoft Excel 2007. Computational Statistics & Data Analysis, 52(10), 4570-4578.