

An Introduction to Microsoft® Excel® Macros



LORMAN®

Published on www.lorman.com - December 2017

An Introduction to Microsoft® Excel® Macros, ©2017 Lorman Education Services. All Rights Reserved.

EXCEL is a registered trademark of Microsoft Corporation and this event is not sponsored by or affiliated with Microsoft Corporation.

INTRODUCING

Lorman's New Approach to Continuing Education

ALL-ACCESS PASS

The All-Access Pass grants you **UNLIMITED** access to Lorman's ever-growing library of training resources:

- ✓ Unlimited Live Webinars - 120 live webinars added every month
- ✓ Unlimited OnDemand and MP3 Downloads - Over 1,500 courses available
- ✓ Videos - More than 1300 available
- ✓ Slide Decks - More than 2300 available
- ✓ White Papers
- ✓ Reports
- ✓ Articles
- ✓ ... and much more!

Join the thousands of other pass-holders that have already trusted us for their professional development by choosing the All-Access Pass.



Get Your All-Access Pass Today!

SAVE 20%

Learn more: www.lorman.com/pass/?s=special20

Use Discount Code Q7014393 and Priority Code 18536 to receive the 20% AAP discount.

*Discount cannot be combined with any other discounts.

An Introduction to Microsoft® Excel® Macros

Microsoft® Excel® is, without a doubt, the gold standard when it comes to working with spreadsheets in today's office environments. Though the software itself goes to great lengths to make it easier for administrative professionals and others to work with large amounts of data in a series of complex cells, even these helpful cues and innovative user interface elements often fall short of complete convenience. For this reason, Microsoft® has long paired its basic, intuitive user interface with the far more versatile and advanced ability to create macros. Macros are designed to make repetitive tasks a great deal easier, largely by automating the process and requiring as little user input as is necessary to complete the task, enter or modify data, and produce the desired result.

Currently, Microsoft® relies on embedded Visual Basic technology to make the macros work. That's actually a very good thing, because Visual Basic allows for truly advanced macro creation and deployment that turns Excel® into its own information management application. Because Visual Basic has been used for so long, and in so many diverse applications, those who get to know macros on a more advanced level can instruct Excel® to do virtually anything they set their mind to. Advanced use of macros, though, may not be the first thing on the mind of those who are new to this option Excel®. For administrative 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.

So, What is a Microsoft® Excel® Macro, Exactly?

The best way to think about a Microsoft® Excel® macro is to think of it as a single button that unleashes a series of tasks, all at once. In fact, that's largely the definition of the word "macro" in most dictionaries. For users of the Microsoft® Excel® software, that means a macro can be created to specifically format certain cells, over and over again, if that action is usually undertaken manually multiple times per day. The macro can also be used to highlight certain cells, produce reports based on certain data, or perform virtually any task in an automated way that a user would ordinarily proceed with manually when using the Excel® software without the aid of programming and automated

Why Use a Macro Instead of Performing These Tasks Manually?

There's certainly nothing wrong with using Excel® without the help of macros, but those who work with the software extensively on a daily basis might soon find themselves overwhelmed by the sheer amount of minor tasks that they have to undertake when entering new data, producing reports, or compiling presentations based on the spreadsheet data. In many work environments, there is a very large and persistent focus on productivity levels and the number of things an administrative professional can get done in a single day. The use of macros allows for routine tasks in Microsoft® Excel® to be taken care of behind the scenes by the software itself, freeing the user to focus on bigger projects, more important tasks, and items that need their undivided attention more than the average spreadsheet traditionally requires.

Furthermore, the use of macros ensures that the action taken will be consistent and identical across the board, reducing the likelihood of human error. This further enhances the productivity level of office workers, and it ensures that data will be treated with absolute precision based on computer programming, rather than with relative precision based on user input.

As with any development in the tech world, though, Microsoft® Excel®'s macros present a wide range of benefits and disadvantages to office workers and others who depend on spreadsheets for daily tasks and office routines. Understanding and compensating for each of these pros and cons will make macros the most useful, allowing them to be more of an enhancement than a liability for those who deal extensively with stored data and complex equations.

The Advantages of Using Macros for Routine Tasks in Excel®

Employing macros for everyday Excel® data entry and more complex tasks does come with a number of great benefits, many of which can make using Excel® a great deal more enjoyable. Furthermore, use of macros is excellent for productivity levels. Those looking to embrace macros should consider the following major advantages.

1. A Macro Produces Consistent Results Every Single Time

A macro is essentially a miniature computer program that is designed to engage in routine tasks at the click of a button or with the use of a single keystroke. Because the macro is basically a computer program, it performs the exact same instructions every single time it is invoked. If three cells need to be formatted a certain color, with a certain border thickness, that formatting will be produced without fail, each and every time it is required.

Similarly, the predictable nature of macros means that they can perform complex equations and computational tasks very easily. There is no need to do these computations manually, and this can save a great deal of time. When productivity matters, consistent results can reduce workloads while making the workday far more productive for all involved.

2. Macros Reduce the Ability for Human Error to Cause Major Problems

Because macros are a small computer program, or script, designed to produce predictable results, they also produce a far lesser opportunity for human error to miscalculate key equations or alter the wrong cells within the spreadsheet. In addition to boosting productivity and reducing user error, this has the added effect of sparing other departments from the errors made elsewhere in the company. Because macros can make it just a bit less stressful to get the job done and communicate with others in the office, they're a natural choice among accountants, administrative professionals, and many others who require manipulation of a large amount of stored data.

3. A Great Deal of Time is Saved via Spreadsheet Automation

Naturally, every task performed by a macro can be performed by a person. Even the creation of equations in Microsoft® Excel® can be done by hand using the company's right-click menus and its equation bar. Those equations can take a great deal of time to create, however, especially if someone has to create those equations multiple times a day in the same spreadsheet. Macros are lightning fast in almost all scenarios, and they can create and execute equations in Excel® in a matter of mere seconds. In addition to boosting productivity overall, this results in a reduction of stress on behalf of administrative workers. The automation of equations and equation creation also allows other tasks, in other applications, to be completed in the interim.

4. Excel® Macros Can Be Used Across Multiple Spreadsheets

Macros can be saved to a specific Excel® workbook, or they can be saved for use across multiple files and in multiple instances. This gives them a great deal of flexibility, and it means that administrative professionals can essentially create a small series of macros that automate large number of their daily tasks. Those macros can then be modified at will, whenever changes are needed, in order to keep up with new kinds of data or new workbooks. This portability is a major reason that macros have become so popular in offices. Essentially, once they're created, macros allow for entire aspects of a job to be automated across spreadsheets and workbooks, and even across multiple workstations in some cases.

5. Macros Do Not Require Advanced Programming Knowledge

While it's certainly possible to leverage Visual Basic in the creation of advanced Microsoft® Excel® macros, the average macro does not require any advanced Visual Basic programming knowledge or any other programming language proficiency. In recent years, Microsoft® has really focused on usability and basic features, allowing users to create a macro simply by performing the task on-screen and then teaching Excel® how to perform that task in one or more spreadsheets or workbooks. This visual approach, rather than one that relies on hard programming, makes macros more approachable than ever, especially for entry-level users and those new to Excel® itself.

The Disadvantages of Employing Microsoft® Excel® Macros in Today's Spreadsheets

While macros present a revolutionary way to cut down on the amount of time it takes to run advanced computations, generate charts and graphs, or compile office presentations, these automated routines are not without their share of drawbacks. Indeed, whenever automation is involved users have just as great an opportunity to eliminate errors and hard work as they do of making things just a bit harder on themselves. Here's a look at the biggest drawbacks that can sometimes result from using macros in routine, everyday applications.

1. A Single Erroneous Keystroke Can Wreak Havoc

All it takes for a macro to wreak havoc is one wrong keystroke, an improperly designated cell, or a programmed routine that is off by just one cell, click, number, or some other small detail. The macro will then perform that erroneous routine automatically, sometimes across multiple spreadsheets or workstations, incorrectly calculating values and running equations. In a matter of mere moments, office workers can be faced with one or more spreadsheets that have been modified incorrectly. All of those spreadsheets will need to be fixed and, thanks to the nature of macros, those fixes will need to be applied by hand. This not only eliminates any gains in productivity, but it can actually set workers back by a few minutes or even a few hours. For this reason, extreme caution is recommended when automating even the smallest tasks.

2. Advanced Macros Require Quite a Bit of Time to Learn and Deploy

While creating basic and even moderately difficult macros is quite easy, thanks in no small part to the on-screen macro programming software, the generation of more advanced macros takes quite a bit of time. In order to create more complex automated routines, office workers will have to familiarize themselves with Visual Basic for Applications, the unique programming language that Microsoft® uses when creating more advanced automation sequences. This can take quite a while, from a few days to a few weeks, and some people even take classes in Visual Basic and Visual Basic for Applications.

Beyond merely learning the programming language, the coding of the macro itself is no small task when things get more advanced. The creation of a macro that can perform simultaneous tasks, and tasks that span multiple spreadsheets at the same time, can take the better part of a workday. In some cases, it may take a few days of concentrated work to ensure that the macro is performing its task correctly and that the small errors above are not derailing the entire process and creating headaches for others in the office.

3. It's Impossible to Know Whether a Macro is "Future-Proof"

Like all software products, Microsoft® Excel® and Visual Basic for Applications are both constantly evolving. Microsoft® generally releases new updates for both applications every three or four years, and those updates can result in quite a few headaches for office professionals who rely on macros to get the job done. In some cases, Microsoft® may deprecate pieces of Visual Basic code, or they may remove the option for some kinds of automation within the Excel® application.

Macros need to be under constant review after every software update, and not just the major updates that come every several years. Indeed, even so-called "point releases" of the Microsoft® Office software can change how some functions work, resulting in a macro re-programming requirement that can take up valuable time during the workday.

4. Cross-Platform Compatibility is Not a Given

While Microsoft® does not currently have a version of its productivity suite for Linux-based desktops, the company does sell Microsoft® Office for Mac to the growing community of OS X users around the world. While very similar to Microsoft® Office on Windows desktops, this software is not identical. Some macros may not work when spreadsheets are sent to those with other operating systems, and this can reduce their overall utility in office environments where documents are cloud-based or administrative professionals are sometimes permitted to telecommute and use their own personal computers from home.

Creating Macros: A Look at How Automation is Generated in Microsoft® Excel®

At an earlier point in Microsoft® Office's development, the creation of macros was limited to only those most experienced in programming languages like Visual Basic. Today, though, Microsoft®'s on-screen action recorder actually allows a macro to be programmed by "showing" it what to do. Users simply start the recording software and then proceed through the task that they wish to automate.

Microsoft®'s intelligent tool monitors these tasks and writes the necessary Visual Basic code on the fly, creating a macro without a single shred of Visual Basic programming experience. This process is easy to initiate, and it's increasingly popular among those with no Excel® or programming experience.

Step 1: Launch the Macro Recording Tool in Microsoft® Excel®

Open Microsoft® Excel® and click on the software's "Tools" menu. Next, hover over the "Macros..." item in the menu that appears on screen. By hovering over this item, a submenu should appear with numerous options relating to macro creation and execution. Click "Record New Macro" to launch the visual programming box, which will observe actions taken on-screen and convert them into a macro written in Visual Basic for Applications.

Step 2: Name and Store the Macro About to Be Created

Microsoft® Excel®'s macro recorder will allow for the new macro to be named and assigned to a given spreadsheet, workbook, or to the Excel® application itself via the personal.xls workbook. Give the macro a short but easy-to-remember name, and then decide whether it should apply to one spreadsheet, a single workbook, or the application at large. When those decisions and selections have been made, proceed to the next step in the process.

Step 3: Perform the Macro's Function While Recording On-Screen

The next step in the process is perhaps the easiest: Simply perform the action on-screen that the macro will be used to automate. This can involve running equations, computing the values of various cells, formatting certain cells, generating charts, graphs, reports, or presentations, or any other feature that is supported by the Microsoft® Excel® software. When recording has started, a simple "stop" button will appear on the screen. Press this button when the macro action is complete, and the software will stop recording and immediately process the recording and convert it to Visual Basic code.

Running a Macro that Has Been Successfully Recorded and Processed

After a macro has finished recording, the system will require a brief moment to process the actions taken on the screen, turn them into Visual Basic code, and then make the new macro available for use in a given workbook, spreadsheet, or system-wide via the personal.xls option. When the macro is available, running it is as easy as a few clicks or a single keystroke.

Option 1: Access the Newly Created Macro and Run it via the "Macros" Menu

Open Microsoft® Excel® and click on the "Tools" menu near the top of the screen. Next, hover over the "Macros..." menu once again, and await the submenu that follows. In that menu, click on the macro that was just recorded and press the "Run" button. The macro will now proceed through the workbook, performing the actions requested on the necessary spreadsheets. That's all it takes to start the process via the software's "Tools" menu, but there is one way to make this process even quicker and easier.

Option 2: Create a Key Command to Call the Macro and Put it into Action

By following the steps mentioned earlier, office professionals can bring up the same macro box that was used to run the newly created macro. Instead of clicking "Run," however, it's possible to click "Options" and then define a key combination that will cause the macro to run instead. This key combination can be used in any spreadsheet or workbook where the macro is included and it requires no clicks to start the process. Macro actions will begin as soon as the keystroke is pressed, and will only stop if instructed to do so by the end user.

Macros Can Be Used to Radically Transform a Business and Boost Productivity

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. The company's visual recording tool makes the technology more accessible than ever, and it ensures that even those new to Excel® or administrative work can automate their desktop in ways that weren't possible even a few years ago.

Remember that macros come with a unique set of advantages and drawbacks, each of which can dynamically advance the company's business or lead to a pretty significant setback. The general rule of thumb when working with macros is to pay careful attention to the details, as it is the smallest details that can derail a macro and lead to faulty equations, erroneous charts, and embarrassing errors that won't be treated kindly by those in other departments.

Furthermore, it's a good idea to keep in mind that macros should be checked for compatibility and functionality after each software update, and on multiple platforms if there is more than one platform being used for spreadsheet management. With attention to the details and careful long-term maintenance of macros through software updates and other system changes, they can dramatically improve the office and make administrative tasks far easier than in the past.

The material appearing in this website is for informational purposes only and is not legal advice. Transmission of this information is not intended to create, and receipt does not constitute, an attorney-client relationship. The information provided herein is intended only as general information which may or may not reflect the most current developments. Although these materials may be prepared by professionals, they should not be used as a substitute for professional services. If legal or other professional advice is required, the services of a professional should be sought.

The opinions or viewpoints expressed herein do not necessarily reflect those of Lorman Education Services. All materials and content were prepared by persons and/or entities other than Lorman Education Services, and said other persons and/or entities are solely responsible for their content.

Any links to other websites are not intended to be referrals or endorsements of these sites. The links provided are maintained by the respective organizations, and they are solely responsible for the content of their own sites.