VBA (MACROS)

Work more efficiently by learning how to automate recurring tasks and create user applications

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WHAT TO EXPECT
The Excel VBA training lasts for two days during which you progress through many exercises as you learn about different functionalities and practical applications of VBA.

OBJECTIVES
VBA in Excel will enhance your productivity and allow you to build macro-driven applications, automate repetitive operations and create custom functions. You will have the ability to optimize reporting and data management processes by streamlining recurring tasks within your department.

FOR WHO
The Excel VBA training is designed for individuals that would benefit from automation and creation of custom user applications. Some prior knowledge of basic Excel functionalities is required.

OUR MISSION
The transformation of data into meaningful information is crucial for making the right business decisions. We help you to manage the ever-widening stream of data in the most time-efficient ways. With trainings that are adapted to your industry and function, you will quickly become an expert in organizing, analyzing, and visualizing data to gain more insights. In a nutshell - our trainings enable you to do more work in significantly less time and with better results.
Beyond all the great tools available within the workbook user interface, Excel also offers an additional working environment that enables automation of routine tasks or even development of user applications. This environment is the programming language embedded in Microsoft Excel – Visual Basic for Applications (VBA). This training begins with an introduction to VBA language and macros.

**Introduction to object-based programming**
Understanding the basic concepts of VBA language – objects, methods, properties. Exploring the relationship between Excel and VBA code.

**Recording and cleaning macros**
Using Excel's macro recorder to create a simple macro. Comparing recorder code to the most efficient VBA code. Discussing the basics of cleaning macros.

**Working with the Visual Basic editor**
Exploring the Visual Basic editor interface, working with properties and methods for ranges, worksheets and workbooks.

**Using debugging tools**
Learning to handle common errors in VBA. Navigating through code with the debugger.

**Example questions**
How can I access the Visual Basic editor?
What are the main objects I can work with in VBA?
How can I record and clean macros?

The VBA language relies on a set of conventions and elements that allow you to manipulate application objects. One of the key elements you will be working with in your code are variables. In this section of the training you will learn how to declare variables, discuss their types and apply them in built-in functions.

**Declaring and scoping variables**
Understanding the importance of declaring variables. Referring to public variables from different VBA modules.

**Defining data types**
Discussing various data types, their limitations and guidelines on choosing the best one for specific cases.
Working with constants, strings, and dates
Defining and referring to constants in procedures. Dealing with text and date information.

Assigning statements
Building and debugging expressions in Visual Basic editor.

Using built-in functions
Incorporating worksheet functions in the VBA code.

Example questions
What does Option Explicit statement mean and is it a best-practice to declare variables?
What kind of data types can I used in VBA?
How do I define a constant?
Can I use standard Excel functions in my VBA code?

CONTROLLING CODE EXECUTION
One of the most useful features of VBA is its ability to automate routine tasks. This potential is enabled by incorporating logic statements and loops inside macros. You will learn how to use VBA to perform a set of task automatically for a virtually infinite number of times.

Incorporating logic with If-Then and Select Case constructs
Controlling code with logic constructs. Executing scenarios with Select Case.

Automation with looping blocks of instructions
Overview of different loop types: For, For Each, Do While, Do Until. Building nested loops in a procedure.

Example questions
How can I incorporate decision-making capability in my code?
How can I loop blocks of code in procedures or functions?

EVENT PROGRAMMING
The VBA environment is programmed to monitor events for variety of objects such as workbook, worksheet, application etc. This part of the training will help you understand Excel’s event and use

Entering event-handler code and understanding event sequences
Exploring predefined event sub procedures in the Visual Basic editor.

Examining worksheet and workbook events
Learning how to correctly store the code. Working with worksheet and workbook events.

Monitoring with application events
Overview of monitoring events for all open workbook and worksheets. Enabling application-level events.
VBA allows you to build sophisticated user applications. Incorporating dialog boxes and userforms in your VBA project enables users to interact with the application through an interface that you can fully customize. This section introduces userforms and shows you how to control them from within the procedure.

**Using custom dialog box alternatives**
- Exploring available dialog boxes such as InputBox, MsgBox, GetOpenFileName and GetSaveAsFilename.

**Adding and adjusting toolbox controls**
- Learning about various toolbox controls that can be used in a user form.

**Displaying and closing userforms, incorporating userform events**
- Creating userforms in design mode and controlling them from the VBA procedure.
- Combining userforms and application events.

**Adding controls at runtime**
- Creating user forms from within the procedure. Working with dynamic user inputs.

**Using modeless and transparent forms**
- Creating userforms that do not require action from the application user and working with transparent forms.

Example questions
How can I receive input from users and store it as a variable in my application?
What are toolbox controls?
How can I display a userform based on application user’s action?
Creating User Defined Functions

Even though Excel includes over 450 predefined worksheet functions, you may find it helpful to build custom functions. They have a potential to simplify your work in Excel to a large extent. You will also be able to use them in other sub procedures. This section introduces function procedures through various examples.

Working with function arguments. Insert function dialog box and custom functions

Creating functions with and without arguments. Using loops to build functions with indefinite number of arguments. Working with public user-defined functions argument descriptions in the insert function dialog box.

Calling functions from sub procedures and debugging function

Working with VBA syntax to call functions from within other procedures. Discussing common errors when working with VBA functions.

Sharing user defined functions and add-ins

Creating installable add-ins, storing functions in the personal workbook.

Example questions

How can I use VBA to create custom functions?
How can I recall custom functions while in a worksheet?
Can I use my custom functions inside a VBA module?
BAS DOHME

Bas founded XL Your Mind in 2015 and trained over 4000 people to date in one of the 8 trainings he developed relating to data analysis and automation with Power BI, Tableau, and Excel. He has prior work experience as a management consultant in the finance and risk group of Accenture, where he optimized insurers’ financial closing processes through numerous Excel solutions. Business intelligence as well as predictive modelling has formed a cornerstone of many reporting tools and dashboards he has built at various companies.

Bas is certified as a financial risk manager (FRM) from the Global Association of Risk Professionals. He holds a Master of International Business from Queen's University and a Master of Science in International Business from Maastricht University with a specialization in finance from which he also holds a Bachelor of Science in Economics. Bas speaks English, Dutch, and German.

DOMINIK PARTYKA

Dominik developed his passion for business analytics and programming while delivering and managing financial trainings for over 2,500 associates of a large-pharmaceutical company. In his next role, he helped build a KPI dashboard currently being rolled out globally, supported by PowerPivot for SharePoint. He also developed several tools that automated business activities such as master data conversion and KPI reporting. Dominik's professional mission is to help organizations realize the tremendous potential of effective business analytics and automation.

Dominik holds a Master of International Business from Queen's University as well as a Master of Science in International Business from Maastricht University majoring in finance. He speaks English and Polish.
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