

# Excel with Macros & VBA 1 – Data Navigation & Input – Course Outline

## A. Course Overview

Learn to create Macros that navigate a worksheet's cells, to input data into target cells, that allows user changes to a sheet's structure, without causing Macro runtime errors. Creating this sort of "unbreakable" Macro code is done through use of Macro Recorder Best Practices. Also, learn to use the VB\* Editor to examine and fix generated VBA\* code. Learn to create Data Validation cells along with Alert Messages and Data Input boxes, plus Macro Execution Buttons to control the update of an Excel database.

## B. Performance Goal

Through this course students will know how to employ Best Practices in using Excel's Macro Recorder. This will enable Macro (VBA\*) code to be generated that needs little or no modification, so that macro run-time errors are avoided should end users make worksheet modifications. Students will learn this by creating worksheet and macro components that combine to build a Database Update Application.

## C. Learning Outcomes

1. Learn to use or a basic refresher on the use of Excel's AutoFill to speed data input
2. Learn to use Excel's Data Validation feature to restrict a cell's input to a list of valid values
3. Learn two ways to expand these valid values – Static and Dynamic assignment of list ranges
4. Learn to Record a Macro, Run the macro and examine its generated VBA code
5. Learn the difference between Absolute and Relative Reference Macros and how to create them.
6. Learn about Macro Security Settings and how to Save and Open files that contain macros.
7. Learn the difference between a Local and Global Macro and how to record code for each type.
8. Learn about how to share macros with other users, and the pros/cons of sharing via a network.
9. Learn to create Messages that inform users of processing done or ask if it's OK to run a macro.
10. Learn to Identify a Macro with "Breakable Code" and learn how to make it "Unbreakable".
11. Learn Best Practices that result in Non-Breakable Macros that work on copied worksheets.
12. Learn to create and use Worksheet Buttons to simplify end user execution of a macro.
13. Learn all about the VB (Visual Basic) Editor Screen and Management of VBA Project Modules.
14. Learn differences between creation and use of a "Sheet Form" and VBA's User Form for data input.
15. Practice applying Data Validation to the creation of an Input Form with invalid data Error Messages.
16. Learn to create a macro that transfers data from an input form to a separate database sheet.
17. Learn to create macros to Clear the input form and save and close the workbook.
18. Practice the use of User Messages prior to and at the end of the execution of macros.
19. Learn to Hide and Protect Sheets, Workbook and VBA Code from unauthorized changes.
20. Learn to enhance the "Database Update Application", so that:
  - If input fields are flagged as Mandatory, then the user is informed of any missing inputs.
  - If the Database Sheet has misaligned columns, then new records cannot be added to it.
  - If needed, after a new record is added to the Database Sheet, this last Add can be Undone.
21. Learn to Create a Backwards Compatible Macro to skip features not available in earlier versions