

## Advanced VBA Excel Macros Programming: Introduction to VBA:

**Duration: - 15 session (per hour)**

- What Is VBA? Need and Application of VBA
- Introduction to Developer tab
- Introduction to Macro Recordings: Using the Excel Macro Recorder, Macro Security, Recording Macro, Naming Macro, Executing Macro, Saving and Editing Macro
- Working In the Visual Basic Editor: Project Explorer, Properties window, Object Browser, Standard Module and Sheet Module
- Debugging mode, Breakpoints, Bookmarks, watch window, immediate window and Locals window, Inbuilt VBE Help feature
- Introducing the Excel Object Model: Application, Workbooks, Worksheet Objects.
- Variable, Constant and Data types: Variable Naming rules, Declaring, Initializing Variables, Option Explicit, Object Variables.
- Simple Dialog Boxes: Message boxes and Input boxes

Advanced VBA Excel Macros Programming: VBA Language Detailed Concepts:

- Scope and lifetime of variables
- VBA Sub and Function Procedures
- Using VBA and Worksheet Functions
- Working with Range Objects: Properties and Methods of Ranges – Range referencing, selection, Active cell, cells and offset properties, resize ranges, value, formula and text properties, clear, delete, copy, paste and format ranges, Filters, special cells method, union and intersect ranges, current region property, working with dynamic ranges, last cell, last row and last column
- Workbooks and Worksheets: The Workbooks Collection, getting a Filename from a Path, Files in the Same Directory, Overwriting an Existing Workbook, Saving Changes, The Sheets Collection, Worksheets, Copy and Move

## Advanced VBA Excel Macros Programming: Controlling Program Flow with Loops and Logical & Error Handling:

- Using Conditional constructs & Loops: If-Then-Else, Select-Case, And/or conditions, Using Looping constructs: For-Next, For-Each, Do-While, Do-Until Decision-making and Code Branching, Using Label Constructs
- Multiple Inner Loops for Detailed Looping Concept.
- Automatic Procedures and Events

- Types of Errors: Design Errors, Compile Errors, Runtime Errors. Logical Errors.
- How to Debug the Errors.

#### **Advanced VBA Excel Macros Programming: Writing of Formula in VBA:**

- Introduction of programming concepts for writing the Excel Formulas in to the Program.
- Difference in between the concept of “Worksheet function Vs. Active cell Formula”
- Difference between the A1 and R1C1 style of writing formula in VBA.
- Look at the style A1 and R1C1 and decide which is better.
- Find out the better solution to write the formulas in VBA.
- Writing of the basic formulas into VBA.
- Writing of the complex formulas into the VBA.
- Writing of Logical formulas and Lookup formulas in VBA.
- Freezing of the formula in VBA.
- Other useful formulas to be write in Class.
- Excel Multiple Formulas Writing in VBA.

#### **Advanced VBA Excel Macros Programming: Error Handling and Arrays:**

- Data Validation & Input restrictions Effective Coding
- Testing and debugging your code
- Error-Handling Techniques
- Bug Extermination Techniques
- Using On error Go to and on error Resume next

#### **Advanced VBA Excel Macros Programming: Using Names, Sort and Filter:**

- Named Ranges: Naming Ranges, Using the Name Property of the Range Object, Working with Named Ranges, determining which Names Overlap a Range
- Sorting: Structuring the Data, sorting a Range, Sorting a Table,
- Filter: AutoFilter Object, Filter Object, Date Custom Filter, Adding Combo Boxes, Copying the Visible Rows, Advanced Filter

#### **Advanced VBA Excel Macros Programming: Advanced VBA Functions:**

- User Define Function (UDF): Detailed discussion on User Defined Function: What is User Defined Function, Use of User Defined Function and How to create any Function OR Formula which is not available in Excel, and you want it to work for you by the help of Macro.
- Create Your Own Formulas with VBA Macros Coding.
  - Working With VBA Events: Discussion on VBA Events, what are Events, How and when to use the VBA Events.
- Detailed Programming in Worksheet and Workbook Events.

#### **Advanced User Forms and GUI:**

- Using User Form Controls
- User Form Techniques and Tricks
- Form Control vs. Active X control, Accessing Your Macros through the User Interface.
- VBA User Forms: Discussion on VBA User Forms, what are User Forms, why to
- Create User Forms and How to create User Forms. Accessing Your Macros through the User Interface
- Use of Switches Like: Labels, Text Boxes, List Boxes, Combo Boxes, Check Boxes, Option Button, Frames, Multiage's.