



Any Thing &
Every Thing in
Data Science

Excel VBA/Macro Programming – Advanced Program

Getting Started

- Excel File Types
- Macro Security
- The Macro Recorder
- Record Macro to Change Worksheet Orientation
- Absolute vs. Relative References I
- Absolute vs. Relative References II
- The Visual Basic Editor
- VBA Basics

The Fundamentals of the Excel Object Model

- Object-Oriented Programming in Real Life
- Preview
- Real Life Objects
- Collection Objects in Real Life
- Objects As Properties
- The Excel Object Model
- Access Object from Collection by Name
- Default Properties
- The Name Property on Workbook and Worksheet Objects
- Object-Oriented Programming

The Visual Basic Editor

- Visual Basic Editor Options
- Create and Delete a Procedure
- Preview
- Procedures
- The Immediate Window and Debug.Print Method
- The MsgBox Method
- Comments

Practice with Procedures

The Visual Basic Editor

Objects and Methods

Methods without Arguments

Methods without Arguments

Methods with Arguments

Methods with Arguments

Methods with Multiple Arguments

The Object Browser

Ways to Invoke A Procedure

The TypeName Method

Objects and Methods

Variables and Data Types

Syntax Tips

Variable Declarations and Assignments

Multiple Variable Declarations

The Option Explicit Setting

The Byte, Integer and Long Data Types

Numeric Data Types

Mathematical Operations

The Single and Double Data Types

The String Data Type

String and Double Data Types

The Boolean Data Type

The Date Data Type

The Variant Data Type

The Object Data Type

Default Values for Declared Variables

Variable Declarations

Procedures

Variable Scope

Call A Procedure from Another one

Procedures with Arguments

Procedure Scope (Public vs. Private)

The Exit Sub Keywords

Constants

Predefined Constants

Preview

Procedures

Object Deep Dive

The Application Object

The Application.DisplayAlerts Property

The Workbooks.Count and Worksheets.Count Properties

The Workbooks.Open Method and Workbook.Path Property

The Workbooks.Close Method

The Workbooks.Add Method

The Workbook.SaveAs and Workbook.Save Methods

The Workbook.Activate Method
The Workbook.Close Method
The Application, Workbooks and Workbook Objects
The Worksheets.Add Method
Add a New Worksheet to End of Current List of Worksheets
The Worksheet.Visible Property
The Worksheet.Copy Method
The Worksheet.Delete Method
The Worksheet.Move Method

Range References

The Range.Select Method
Preview
The Value vs. Text Properties
R1C1 Notation, Part I
R1C1 Notation, Part II
The Formula and FormulaR1C1 Properties
The Range.Offset Property
The Range.Resize Property
The Offset and Resize Properties
The Cells Property
The Range.CurrentRegion Property
The Range.End Property
The Range.Count and Range.CountLarge Properties
The Range.Row and Range.Column Properties
The Range.Rows and Range.Columns Properties
The Range.EntireRow and Range.EntireColumn Properties
Get Last Row of Data in Worksheet

Range Actions

The Range.FillDown Method
The Range.Replace Method
The Range.TextToColumns Method
The Range.Worksheet Property
The Range.Sort Method
The Range.Font Property
The Range.Interior Property
The Range.ColumnWidth and Range.RowHeight Properties
The Range.AutoFit Method
The Range.Clear, Range.ClearContents and Range.ClearFormats Methods
The Range.Delete Method
The Range.Copy and Range.Cut Methods
The Paste and PasteSpecial Methods on the Worksheet Object
The Parent Property on All Objects

Conditionals

Boolean Expressions
Boolean Expressions
The If Then Statement
The Elseif and Else Statements

Select Case
The AND & OR Logical Operators
Logical Operators
The NOT Operator

Iteration

The For Next Loop
The Step Keyword
Deleting Rows
Fill Empty Rows
The For Each-Next Construct
Iterating over a Range of Cells with For Each
The With-End With Construct
Exit For and Review of Exit Sub
Iteration

Miscellaneous Features

The MsgBox Method In Depth, Part I
Preview
The MsgBox Method In Depth, Part II
MsgBox Options
StatusBar
The Application.ScreenUpdating Property
SpecialCells
The InputBox Function
The Application.InputBox Method

-Arrays

Intro to Arrays
Alternate Syntax for Fixed-Size Arrays
The Option Base 1 Syntax and Write Array Values to Cells
Initialize Arrays within a For Loop
The LBound and UBound Methods
Dynamic Arrays
The Range.RemoveDuplicates Method

Functions

VBA Functions, Part I
VBA Functions, Part II
The Split Function
The Is Family of Functions
Date and Time Functions
More Date and Time Functions
Excel Worksheet Functions
Custom Functions

Debugging

Intro to Error Handling
The OnError and GoTo Keywords
The OnError Resume Next Keywords
Error and Err.Number
Stepping Through Code

Breakpoints

Events

Introduction to Events

The Worksheet_SelectionChange Event

Review of Application.EnableEvents

The Worksheet_Change Event

Preview

The Worksheet_Activate Event

Highlight Row and Column Up to Cell Where Cursor Is Placed

Workbook Events and The Sh Argument

The Workbook_Open Event

Procedures with Boolean Arguments + The Workbook_BeforePrint Event

User Forms

Create UserForm, Toolbox, Properties, Controls

The Label and TextBox Controls

Naming Conventions

Naming Conventions

Design Aesthetics

The CommandButton Control

Add Event Procedure to Control

Unload and Hide a UserForm

Submit the UserForm

Activate a UserForm from Procedure

The initialize Event

The ListBox Control I - Wire up the Form

The ListBox Control II - React to User Selection

The ListBox Control III - Select Multiple Items

The ComboBox Control I

The ComboBox Control II

The CheckBox Control