

Introduction to Excel

Day 1

- Understanding What Excel Is Used For
- Looking at What's New in Excel
- Understanding Workbooks and Worksheets
- Moving around a Worksheet
 - Navigating with your keyboard
 - Navigating with your mouse
- Using the Ribbon
 - Ribbon tabs
 - Contextual tabs
 - Types of commands on the Ribbon
 - Accessing the Ribbon by using your keyboard
- Using Shortcut Menus
- Customizing Your Quick Access Toolbar
- Working with Dialog Boxes
 - Navigating dialog boxes
 - Using tabbed dialog boxes
- Using Task Panes
- Creating Your First Excel Workbook
 - Getting started on your worksheet
 - Filling in the month names
 - Entering the sales data
 - Formatting the numbers
 - Making your worksheet look a bit fancier
 - Summing the values
 - Creating a chart
 - Printing your worksheet
 - Saving your workbook

Entering and Editing Worksheet Data

- Exploring Data Types
 - Numeric values
 - Text entries
 - Formulas
- Entering Text and Values into Your Worksheets
 - Entering numbers
 - Entering text
 - Using Enter mode
- Entering Dates and Times into Your Worksheets
 - Entering date values
 - Entering time values
- Modifying Cell Contents
 - Deleting the contents of a cell
 - Replacing the contents of a cell
 - Editing the contents of a cell
 - Learning some handy data-entry techniques
 - Automatically moving the selection after entering data
 - Selecting a range of input cells before entering data
 - Using Ctrl+Enter to place information into multiple cells simultaneously
 - Changing modes
 - Entering decimal points automatically
 - Using AutoFill to enter a series of values
 - Using AutoComplete to automate data entry
 - Forcing text to appear on a new line within a cell
 - Using AutoCorrect for shorthand data entry
 - Entering numbers with fractions
 - Using a form for data entry
 - Entering the current date or time into a cell
- Applying Number Formatting

- Using automatic number formatting
- Formatting numbers by using the Ribbon
- Using shortcut keys to format numbers
- Formatting numbers by using the Format Cells dialog box
- Adding your own custom number formats

Performing Basic Worksheet Operations

Learning the Fundamentals of Excel Worksheets

- Working with Excel windows
 - Moving and resizing windows
 - Switching among windows
 - Closing windows
- Activating a worksheet
- Adding a new worksheet to your workbook
- Deleting a worksheet you no longer need
- Changing the name of a worksheet
- Changing a sheet tab color
- Rearranging your worksheets
- Hiding and unhiding a worksheet

Controlling the Worksheet View

- Zooming in or out for a better view
- Viewing a worksheet in multiple windows
- Comparing sheets side by side
- Splitting the worksheet window into panes
- Keeping the titles in view by freezing panes
- Monitoring cells with a Watch Window

Working with Rows and Columns

- Inserting rows and columns
- Deleting rows and columns
- Changing column widths and row heights
 - Changing column widths
 - Changing row heights
- Hiding rows and columns

Working with Excel Ranges and Tables

Understanding Cells and Ranges

- Selecting ranges
- Selecting complete rows and columns
- Selecting noncontiguous ranges
- Selecting multisheet ranges
- Selecting special types of cells
- Selecting cells by searching

Copying or Moving Ranges

- Copying by using Ribbon commands
- Copying by using shortcut menu commands
- Copying by using shortcut keys
- Copying or moving by using drag-and-drop
- Copying to adjacent cells
- Copying a range to other sheets
- Using the Office Clipboard to paste
- Pasting in special ways
- Using the Paste Special dialog box
 - Performing mathematical operations without formulas
 - Skipping blanks when pasting
 - Transposing a range

Using Names to Work with Ranges

- Creating range names in your workbooks
 - Using the Name box
 - Using the New Name dialog box
 - Using the Create Names from Selection dialog box

Managing names

Adding Comments to Cells

- Formatting comments
- Changing a comment's shape
- Reading comments
- Hiding and showing comments
- Editing comments
- Deleting comments

Working with Tables

Understanding a table's structure

- The header row

- The data body

- The total row

- The resizing handle

Creating a table

Adding data to a table

Sorting and filtering table data

- Sorting a table

- Filtering a table

- Filtering a table with slicers

Changing the table's appearance

Formatting Worksheets

Getting to Know the Formatting Tools

- Using the formatting tools on the Home tab

- Using the Mini toolbar

- Using the Format Cells dialog box

Formatting Your Worksheet

- Using fonts to format your worksheet

Changing text alignment

- Choosing horizontal alignment options

- Choosing vertical alignment options

- Wrapping or shrinking text to fit the cell

- Merging worksheet cells to create additional text space

- Displaying text at an angle

- Using colors and shading

- Adding borders and lines

Using Conditional Formatting

- Specifying conditional formatting

- Using graphical conditional formats

- Using data bars

- Using color scales

- Using icon sets

Creating formula-based rules

- Understanding relative and absolute references

Conditional formatting formula examples

- Identifying weekend days

- Highlighting a row based on a value

- Displaying alternate-row shading

- Creating checkerboard shading

- Shading groups of rows

Working with conditional formats

- Managing rules

- Copying cells that contain conditional formatting

- Deleting conditional formatting

- Locating cells that contain conditional formatting

Using Named Styles for Easier Formatting

- Applying styles

- Modifying an existing style

- Creating new styles

- Merging styles from other workbooks

- Controlling styles with templates

Understanding Document Themes

- Applying a theme

- Customizing a theme

Understanding Excel Files and Templates

Creating a New Workbook

- Opening an Existing Workbook

- Filtering filenames

- Choosing your file display preferences

- Saving a Workbook

- Using AutoRecover

- Recovering versions of the current workbook

- Recovering unsaved work

- Configuring AutoRecover
- Password-Protecting a Workbook
- Organizing Your Files
- Other Workbook Info Options
 - Protect Workbook options
 - Check for Issues options
 - Manage Workbook options
 - Browser View options
 - Compatibility Mode section
- Closing Workbooks
- Safeguarding Your Work
- Working with Templates
 - Exploring Excel templates
 - Viewing templates
 - Creating a workbook from a template
 - Modifying a template
 - Using default templates
 - Using the workbook template to change workbook defaults
 - Creating a worksheet template
 - Editing your template
 - Resetting the default workbook
 - Using custom workbook templates
 - Creating custom templates
 - Saving your custom templates
 - Using custom templates

Printing Your Work

- Doing Basic Printing
- Changing Your Page View
 - Normal view
 - Page Layout view
 - Page Break Preview
- Adjusting Common Page Setup Settings
 - Choosing your printer
 - Specifying what you want to print
 - Changing page orientation
 - Specifying paper size
 - Printing multiple copies of a report
 - Adjusting the page margins
 - Understanding page breaks
 - Inserting a page break
 - Removing manual page breaks
 - Printing row and column titles
 - Scaling printed output
 - Printing cell gridlines
 - Printing row and column headers
 - Using a background image
- Adding a Header or a Footer to Your Reports
 - Selecting a predefined header or footer
 - Understanding header and footer element codes
 - Exploring other header and footer options
- Exploring Other Print-Related Topics
 - Copying Page Setup settings across sheets
 - Preventing certain cells from being printed
 - Preventing objects from being printed
 - Creating custom views of your worksheet
 - Creating PDF files

Customizing the Excel User Interface

- Customizing the Quick Access Toolbar
 - About the Quick Access toolbar
 - Adding new commands to the Quick Access toolbar.
 - Other Quick Access toolbar actions
- Customizing the Ribbon
 - Why you may want to customize the Ribbon
 - What can be customized
 - How to customize the Ribbon

- Creating a new tab
- Creating a new group
- Adding commands to a new group

Resetting the Ribbon

Introducing Formulas and Functions

Day 2

Understanding Formula Basics

- Using operators in formulas
- Understanding operator precedence in formulas
- Using functions in your formulas
 - Examples of formulas that use functions
 - Function arguments
 - More about functions

Entering Formulas into Your Worksheets

- Entering formulas manually
- Entering formulas by pointing
- Pasting range names into formulas
- Inserting functions into formulas
- Function entry tips

Editing Formulas

Using Cell References in Formulas

- Using relative, absolute, and mixed references
- Changing the types of your references
- Referencing cells outside the worksheet
 - Referencing cells in other worksheets
 - Referencing cells in other workbooks

Using Formulas in Tables

- Summarizing data in a table
- Using formulas within a table
- Referencing data in a table

Correcting Common Formula Errors

- Handling circular references
- Specifying when formulas are calculated

Using Advanced Naming Techniques

- Using names for constants
- Using names for formulas
- Using range intersections
- Applying names to existing references

Working with Formulas

- Not hard-coding values
- Using the Formula bar as a calculator
- Making an exact copy of a formula
- Converting formulas to values

Using Formulas for Common Mathematical Operations

Calculating Percentages

- Calculating percent of goal
- Calculating percent variance
- Calculating percent variance with negative values
- Calculating a percent distribution
- Calculating a running total
- Applying a percent increase or decrease to values
- Dealing with divide-by-zero errors

Rounding Numbers

- Rounding numbers using formulas
- Rounding to the nearest penny
- Rounding to significant digits

Counting Values in a Range

Using Excel's Conversion Functions

Using Formulas to Manipulate Text

Working with Text

Using Text Functions

- Joining text strings
- Setting text to sentence case
- Removing spaces from a text string
- Extracting parts of a text string

- Finding a particular character in a text string
- Finding the second instance of a character
- Substituting text strings
- Counting specific characters in a cell
- Adding a line break within a formula
- Cleaning strange characters from text fields
- Padding numbers with zeros
- Formatting the numbers in a text string
- Using the DOLLAR function

Using Formulas with Dates and Times

Understanding How Excel Handles Dates and Times

- Understanding date serial numbers
- Entering dates
- Understanding time serial numbers
- Entering times
- Formatting dates and times
- Problems with dates
 - Excel's leap year bug
 - Pre- dates
 - Inconsistent date entries

Using Excel's Date and Time Functions

- Getting the current date and time
- Calculating age
- Calculating the number of days between two dates
- Calculating the number of workdays between two dates
 - Using NETWORKDAYS.INTL
- Generating a list of business days excluding holidays
- Extracting parts of a date
- Calculating number of years and months between dates
- Converting dates to Julian date formats
- Calculating the percent of year completed and remaining
- Returning the last date of a given month
 - Using the EOMONTH function
- Calculating the calendar quarter for a date
- Calculating the fiscal quarter for a date
- Returning a fiscal month from a date
- Calculating the date of the Nth weekday of the month
- Calculating the date of the last weekday of the month
- Extracting parts of a time
- Calculating elapsed time
- Rounding time values
- Converting decimal hours, minutes, or seconds to a time
- Adding hours, minutes, or seconds to a time

Using Formulas for Conditional Analysis

Understanding Conditional Analysis

- Checking if a simple condition is met
- Checking for multiple conditions
- Validating conditional data
 - Looking up values
- Checking if Condition AND Condition are met
 - Referring to logical conditions in cells
- Checking if Condition OR Condition are met

Performing Conditional Calculations

- Summing all values that meet a certain condition
 - Summing greater than zero
- Summing all values that meet two or more conditions
- Summing if values fall between a given date range
 - Using SUMIFS
- Getting a count of values that meet a certain condition
- Getting a count of values that meet two or more conditions
 - Finding nonstandard characters
- Getting the average of all numbers that meet a certain condition
- Getting the average of all numbers that meet two or more conditions

Using Formulas for Matching and Lookups

Introducing Lookup Formulas

Leveraging Excel's Lookup Functions

- Looking up an exact value based on a left lookup column
- Looking up an exact value based on any lookup column
- Looking up values horizontally
- Hiding errors returned by lookup functions
- Finding the closest match from a list of banded values
 - Finding the closest match with the INDEX and MATCH functions
- Looking up values from multiple tables
- Looking up a value based on a two-way matrix
 - Using default values for match
- Finding a value based on multiple criteria
 - Returning text with SUMPRODUCT
- Finding the last value in a column
 - Finding the last number using LOOKUP

Using Formulas for Financial Analysis

Performing Common Business Calculations

- Calculating gross profit margin and gross profit margin percent
 - Calculating markup
- Calculating EBIT and EBITDA
- Calculating cost of goods sold
- Calculating return on assets
 - Calculating return on equity
- Calculating break even
- Calculating customer churn
 - Calculating annual churn rate
- Calculating average customer lifetime value
- Calculating employee turnover

Leveraging Excel's Financial Functions

- Converting interest rates
 - Computing effective rate with FV
- Creating a loan payment calculator
 - Creating an amortization schedule
- Creating a variable-rate mortgage amortization schedule
 - Using dates instead of payment numbers
- Calculating depreciation
 - Calculating accelerated depreciation
- Calculating present value
 - Calculating the present value of future payments
- Calculating net present value
 - Calculating positive and negative cash flows
- Calculating an internal rate of return
 - Calculating nonperiodic future cash flows
- Performing financial forecasting

Using Formulas for Statistical Analysis

Working with Weighted Averages

Smoothing Data with Moving Averages

- Applying exponential smoothing to volatile data

Using Functions to Create Descriptive Statistics

- Getting the largest or smallest value
- Getting the Nth largest or smallest value
- Calculating mean, median, and mode

Bucketing Data into Percentiles

Identifying Statistical Outliers with an Interquartile Range

Creating a Frequency Distribution

- An alternative to the FREQUENCY function

Using Formulas with Tables and Conditional Formatting

Highlighting Cells That Meet Certain Criteria

- Highlighting cells based on the value of another cell

Highlighting Values That Exist in List but Not List

Highlighting Values That Exist in List and List

Highlighting Based on Dates

- Highlighting days between two dates

- Highlighting dates based on a due date

Understanding and Using Array Formulas

Day 3

Understanding Array Formulas

- A multicell array formula

- A single-cell array formula

Creating an Array Constant

Understanding the Dimensions of an Array

- One-dimensional horizontal arrays

- One-dimensional vertical arrays

- Two-dimensional arrays

Naming Array Constants

Working with Array Formulas

- Entering an array formula

- Selecting an array formula range

- Editing an array formula

- Expanding or contracting a multicell array formula

Using Multicell Array Formulas

- Creating an array from values in a range

- Creating an array constant from values in a range

- Performing operations on an array

- Using functions with an array

- Transposing an array

- Generating an array of consecutive integers

Using Single-Cell Array Formulas

- Counting characters in a range

- Summing the three smallest values in a range

- Counting text cells in a range

- Eliminating intermediate formulas

- Using an array instead of a range reference

Making Your Formulas Error-Free

Finding and Correcting Formula Errors

- Mismatched parentheses

- Cells are filled with hash marks

- Blank cells are not blank

- Extra space characters

- Formulas returning an error

 - #DIV/! errors

 - #N/A errors

 - #NAME? errors

 - #NULL! errors

 - #NUM! errors

 - #REF! errors

 - #VALUE! errors

- Operator precedence problems

- Formulas are not calculated

- Problems with decimal precision

- "Phantom link" errors

Using Excel Auditing Tools

- Identifying cells of a particular type

- Viewing formulas

- Tracing cell relationships

 - Identifying precedents

 - Identifying dependents

- Tracing error values

- Fixing circular reference errors

- Using the background error-checking feature

- Using Formula Evaluator

Searching and Replacing

- Searching for information

- Replacing information

- Searching for formatting

- Spell-checking your worksheets

Getting Started with Excel Charts

What Is a Chart?

- How Excel handles charts
- Embedded charts
- Chart sheets
- Parts of a chart
- Chart limitations

Basic Steps for Creating a Chart

- Creating the chart
- Switching the row and column orientation
- Changing the chart type
- Applying a chart layout
- Applying a chart style
- Adding and deleting chart elements
- Formatting chart elements

Modifying and Customizing Charts

- Moving and resizing a chart
- Converting an embedded chart to a chart sheet
- Copying a chart
- Deleting a chart
- Adding chart elements
- Moving and deleting chart elements
- Formatting chart elements
- Copying a chart's formatting
- Renaming a chart
- Printing charts

Understanding Chart Types

- Choosing a chart type
- Column charts
- Bar charts
- Line charts
- Pie charts
- XY (scatter) charts
- Area charts
- Radar charts
- Surface charts
- Bubble charts
- Stock charts

New Chart Types for Excel

- Histogram charts
- Pareto charts
- Waterfall charts
- Box & whisker charts
- Sunburst charts
- Treemap charts
- Funnel charts
- Map charts

Using Advanced Charting Techniques

Selecting Chart Elements

- Selecting with the mouse
- Selecting with the keyboard
- Selecting with the Chart Elements control

Exploring the User Interface Choices for Modifying Chart Elements

- Using the Format task pane
- Using the chart customization buttons
- Using the Ribbon
- Using the Mini toolbar

Modifying the Chart Area

Modifying the Plot Area

Working with Titles in a Chart

Working with a Legend

Working with Gridlines

Modifying the Axes

- Modifying the value axis
- Modifying the category axis

Working with Data Series

- Deleting or hiding a data series
- Adding a new data series to a chart
- Changing data used by a series
 - Changing the data range by dragging the range outline
 - Using the Edit Series dialog box
 - Editing the Series formula
- Displaying data labels in a chart
- Handling missing data
- Adding error bars
- Adding a trendline
- Creating combination charts
- Displaying a data table

Creating Chart Templates

Creating Sparkline Graphics

Sparkline Types

Creating Sparklines

Customizing Sparklines

- Sizing Sparkline cells
- Handling hidden or missing data
- Changing the Sparkline type
- Changing Sparkline colors and line width
- Highlighting certain data points
- Adjusting Sparkline axis scaling
- Faking a reference line

Specifying a Date Axis

Auto-Updating Sparklines

Displaying a Sparkline for a Dynamic Range

Visualizing with Custom Number Formats and Shapes

Day 4

Visualizing with Number Formatting

- Doing basic number formatting
 - Using shortcut keys to format numbers
 - Using the Format Cells dialog box to format numbers
- Getting fancy with custom number formatting
 - Formatting numbers in thousands and millions
 - Hiding and suppressing zeros
 - Applying custom format colors
 - Formatting dates and times
- Using symbols to enhance reporting

Using Shapes and Icons as Visual Elements

- Inserting a shape
- Inserting SVG icon graphics
- Formatting shapes and icons
- Enhancing Excel reports with shapes
 - Creating visually appealing containers with shapes
 - Layering shapes to save space
 - Constructing your own infographic widgets with shapes
- Creating dynamic labels
- Creating linked pictures

Using SmartArt and WordArt

- SmartArt basics
- WordArt basics

Working with Other Graphics Types

- About graphics files
- Inserting screenshots
- Displaying a worksheet background image

Using the Equation Editor

Implementing Excel Dashboarding Best Practices

Preparing for a Dashboard Project

- Establishing the audience and purpose for the dashboard

- Delineating the measures for the dashboard
- Cataloging the required data sources
- Defining the dimensions and filters for the dashboard
- Determining the need for drill-down features
- Establishing the refresh schedule
- Implementing Dashboard Modeling Best Practices
 - Separating data, analysis, and presentation
 - Starting with appropriately structured data
 - Spreadsheet reports make for ineffective data models
 - Flat data files lend themselves nicely to data models
 - Avoiding turning your data model into a database
 - Documenting and organizing your data model
- Implementing Dashboard Design Best Practices
 - Keep it simple
 - Don't turn your dashboard into a data repository
 - Avoid the fancy formatting
 - Limit each dashboard to one printable page
 - Format numbers effectively
 - Use titles and labels effectively

Importing and Cleaning Data

- Importing Data
 - Importing from a file
 - Spreadsheet file formats
 - Database file formats
 - Text file formats
 - HTML files
 - XML files
 - Importing vs. opening
 - Importing a text file
 - Copying and pasting data
- Cleaning Up Data
 - Removing duplicate rows
 - Identifying duplicate rows
 - Splitting text
 - Using Text to Columns
 - Using Flash Fill
 - Changing the case of text
 - Removing extra spaces
 - Removing strange characters
 - Converting values
 - Classifying values
 - Joining columns
 - Rearranging columns
 - Randomizing the rows
 - Extracting a filename from a URL
 - Matching text in a list
 - Changing vertical data to horizontal data
 - Filling gaps in an imported report
 - Checking spelling
 - Replacing or removing text in cells
 - Adding text to cells
 - Fixing trailing minus signs
 - Following a data cleaning checklist
- Exporting Data
 - Exporting to a text file
 - CSV files
 - TXT files
 - PRN files
 - Exporting to other file formats

Using Data Validation

- About Data Validation
- Specifying Validation Criteria
- Types of Validation Criteria You Can Apply
- Creating a Drop-Down List
- Using Formulas for Data Validation Rules

Understanding Cell References

Data Validation Formula Examples

- Accepting text only

- Accepting a larger value than the previous cell

- Accepting nonduplicate entries only

- Accepting text that begins with a specific character

- Accepting dates by the day of the week

- Accepting only values that don't exceed a total

- Creating a dependent list

Using Data Validation without Restricting Entry

- Showing an input message

- Making suggested entries

Creating and Using Worksheet Outlines

Introducing Worksheet Outlines

Creating an Outline

- Preparing the data

- Creating an outline automatically

- Creating an outline manually

Working with Outlines

- Displaying levels

- Adding data to an outline

- Removing an outline

- Adjusting the outline symbols

- Hiding the outline symbols

Linking and Consolidating Worksheets

Linking Workbooks

Creating External Reference Formulas

- Understanding link formula syntax

- Creating a link formula by pointing

- Pasting links

Working with External Reference Formulas

- Creating links to unsaved workbooks

- Opening a workbook with external reference formulas

- Changing the startup prompt

- Updating links

- Changing the link source

- Severing links

Avoiding Potential Problems with External Reference Formulas

- Renaming or moving a source workbook

- Using the Save As command

- Modifying a source workbook

- Using Intermediary links

Consolidating Worksheets

- Consolidating worksheets by using formulas

- Consolidating worksheets by using Paste Special

- Consolidating worksheets by using the Consolidate dialog box

- Viewing a workbook consolidation example

- Refreshing a consolidation

- Learning more about consolidation

Introducing PivotTables.

About PivotTables

- A PivotTable example

- Data appropriate for a PivotTable

Creating a PivotTable Automatically

Creating a PivotTable Manually

- Specifying the data

- Specifying the location for the PivotTable

- Laying out the PivotTable

- Formatting the PivotTable

- Modifying the PivotTable

Seeing More PivotTable Examples

- What is the daily total new deposit amount for each branch?

- Which day of the week accounts for the most deposits?

- How many accounts were opened at each branch, broken

Day 5

- down by account type?
- How much money was used to open the accounts?
- What types of accounts do tellers open most often?
- In which branch do tellers open the most checking accounts for new customers?

Learning More

Analyzing Data with PivotTables

Working with Non-numeric Data

Grouping PivotTable Items

- A manual grouping example

- Automatic grouping examples

 - Grouping by date

 - Grouping by time

Using a PivotTable to Create a Frequency Distribution

Creating a Calculated Field or Calculated Item

- Creating a calculated field

- Inserting a calculated item

Filtering PivotTables with Slicers

Filtering PivotTables with a Timeline

Referencing Cells within a PivotTable

Creating PivotCharts

- A PivotChart example

- More about PivotCharts

Using the Data Model

Performing Spreadsheet What-If Analysis

Looking at a What-If Example

Exploring Types of What-If Analyses

- Performing manual what-if analysis

- Creating data tables

 - Creating a one-input data table

 - Creating a two-input data table

- Using Scenario Manager

 - Defining scenarios

 - Displaying scenarios

 - Modifying scenarios

 - Merging scenarios

 - Generating a scenario report

Analyzing Data Using Goal Seeking and Solver

Exploring What-If Analysis, in Reverse

Using Single-Cell Goal Seeking

- Looking at a goal-seeking example

- Learning more about goal seeking

Introducing Solver

- Looking at appropriate problems for Solver

- Seeing a simple Solver example

- Exploring Solver options

Seeing Some Solver Examples

- Solving simultaneous linear equations

- Minimizing shipping costs

- Allocating resources

- Optimizing an investment portfolio

Analyzing Data with the Analysis ToolPak

The Analysis ToolPak: An Overview

Installing the Analysis ToolPak Add-In

Using the Analysis Tools

Introducing the Analysis ToolPak Tools

- Analysis of variance

- Correlation

- Covariance

- Descriptive statistics

- Exponential smoothing

- F-test (two-sample test for variance)

- Fourier analysis

- Histogram

- Moving average
- Random number generation
- Rank and percentile
- Regression
- Sampling
- T-test
- Z-test (two-sample test for means)

Protecting Your Work

- Types of Protection
- Protecting a Worksheet
 - Unlocking cells
 - Sheet protection options
 - Assigning user permissions
- Protecting a Workbook
 - Requiring a password to open a workbook
 - Protecting a workbook's structure
- Protecting a VBA Project
- Related Topics
 - Saving a worksheet as a PDF file
 - Marking a workbook as final
 - Inspecting a workbook
 - Using a digital signature
 - Getting a digital ID
 - Signing a workbook

Part V: Understanding Power Pivot and Power Query

Introducing Power Pivot

- Understanding the Power Pivot Internal Data Model
 - Activating the Power Pivot Ribbon
 - Linking Excel tables to Power Pivot
 - Preparing your Excel tables
 - Adding your Excel tables to the data model
 - Creating relationships between your Power Pivot tables
 - Managing existing relationships
 - Using Power Pivot data in reporting
- Loading Data from Other Data Sources
 - Loading data from relational databases
 - Loading data from SQL Server
 - Loading data from other relational database systems
 - Loading data from flat files
 - Loading data from external Excel files
 - Loading data from text files
 - Loading data from the clipboard
 - Refreshing and managing external data connections
 - Manually refreshing your Power Pivot data
 - Setting up automatic refreshing
 - Editing your data connection

Working Directly with the Internal Data Model

- Directly Feeding the Internal Data Model
- Managing Relationships in the Internal Data Model
- Removing a Table from the Internal Data Model

Adding Formulas to Power Pivot

- Enhancing Power Pivot Data with Calculated Columns
 - Creating your first calculated column
 - Formatting your calculated columns
 - Referencing calculated columns in other calculations
 - Hiding calculated columns from end users
- Utilizing DAX to Create Calculated Columns
 - Identifying DAX functions safe for calculated columns
 - Building DAX-driven calculated columns
 - Month sorting in Power Pivot-driven PivotTables
 - Referencing fields from other tables
 - Nesting functions
- Understanding Calculated Measures
 - Editing and deleting calculated measures

Introducing Power Query

Understanding Power Query Basics

- Understanding query steps
- Viewing the Advanced Query Editor
- Refreshing Power Query data
- Managing existing queries
- Understanding column-level actions
- Understanding table actions

Getting Data from External Sources

- Importing data from files
 - Getting data from Excel workbooks
 - Getting data from CSV and text files
- Importing data from database systems
 - Importing data from relational and OLAP databases
 - Importing data from Azure databases
 - Importing data using ODBC connections to nonstandard databases

Getting Data from Other Data Systems

Managing Data Source Settings

- Editing data source settings

Transforming Data with Power Query

Performing Common Transformation Tasks

- Removing duplicate records
- Filling in blank fields
- Filling in empty strings
- Concatenating columns
- Changing case
- Finding and replacing specific text
- Trimming and cleaning text
- Extracting the left, right, and middle values
- Extracting first and last characters
- Extracting middle characters
- Splitting columns using character markers
- Unpivoting columns
- Unpivoting other columns
- Pivoting columns

Creating Custom Columns

- Concatenating with a custom column
- Understanding data type conversions
- Spicing up custom columns with functions
- Adding conditional logic to custom columns

Grouping and Aggregating Data

Making Queries Work Together

Reusing Query Steps

Understanding the Append Feature

- Creating the needed base queries
- Appending the data

Understanding the Merge Feature

- Understanding Power Query joins
- Merging queries

Enhancing Power Query Productivity

Implementing Some Power Query Productivity Tips

- Getting quick information about your queries
- Organizing queries in groups
- Selecting columns in your queries faster
- Renaming query steps
- Quickly creating reference tables
- Copying queries to save time
- Setting a default load behavior
- Preventing automatic data type changes

Avoiding Power Query Performance Issues

- Using views instead of tables

- Letting your back-end database servers do some crunching
- Upgrading to 64-bit Excel
- Disabling privacy settings to improve performance
- Disabling relationship detection

Day 7

Introducing Visual Basic for Applications

- Introducing VBA Macros
- Displaying the Developer Tab
- Learning about Macro Security
- Saving Workbooks That Contain Macros
- Looking at the Two Types of VBA Macros
 - VBA Sub procedures
 - VBA functions
- Creating VBA Macros
 - Recording VBA macros
 - Recording your actions to create VBA code: the basics
 - Recording a macro: a simple example
 - Examining the macro
 - Testing the macro
 - Editing the macro
 - Absolute versus relative recording
 - Another example
 - Running the macro
 - Examining the macro
 - Rerecording the macro
 - Testing the macro
- More about recording VBA macros
 - Storing macros in your Personal Macro Workbook
 - Assigning a macro to a shortcut key
 - Assigning a macro to a button
 - Adding a macro to your Quick Access toolbar
- Writing VBA code
 - The basics: entering and editing code
 - The Excel object model
 - Objects and collections
 - Properties
 - Methods
 - The Range object
 - Variables
 - Controlling execution
 - A macro that can't be recorded
- Learning More

Creating Custom Worksheet Functions

- Introducing VBA Functions
- Seeing a Simple Example
 - Creating a custom function
 - Using the function in a worksheet
 - Analyzing the custom function
- Learning about Function Procedures
- Executing Function Procedures
 - Calling custom functions from a procedure
 - Using custom functions in a worksheet formula
- Using Function Procedure Arguments
 - Creating a function with no arguments
 - Creating a function with one argument
 - Creating another function with one argument
 - Creating a function with two arguments
 - Creating a function with a range argument
 - Creating a simple but useful function
- Debugging Custom Functions
- Inserting Custom Functions
- Learning More

Creating UserForms

- Understanding Why to Create UserForms
- Exploring UserForm Alternatives
 - Using the InputBox function

- Using the MsgBox function
- Creating UserForms: An Overview
 - Working with UserForms
 - Adding controls
 - Changing the properties of a control
 - Handling events
 - Displaying a UserForm
- Looking at a UserForm Example
 - Creating the UserForm
 - Testing the UserForm
 - Creating an event handler procedure
- Looking at Another UserForm Example
 - Creating the UserForm
 - Creating event handler procedures
 - Showing the UserForm
 - Testing the UserForm
 - Making the macro available from a worksheet button
 - Making the macro available on your Quick Access toolbar
- Enhancing UserForms
 - Adding accelerator keys
 - Controlling tab order
- Learning More

Using UserForm Controls in a Worksheet

Day 8

Understanding Why to Use Controls on a Worksheet

Using Controls

- Adding a control
- Learning about Design mode
- Adjusting properties
- Using common properties
- Linking controls to cells
- Creating macros for controls

Reviewing the Available ActiveX Controls

- CheckBox
- ComboBox
- CommandButton
- Image
- Label
- ListBox
- OptionButton
- ScrollBar
- SpinButton
- TextBox
- ToggleButton

Working with Excel Events

Understanding Events

Entering Event-Handler VBA Code

Using Workbook-Level Events

- Using the Open event
- Using the SheetActivate event
- Using the NewSheet event
- Using the BeforeSave event
- Using the BeforeClose event

Working with Worksheet Events

- Using the Change event
- Monitoring a specific range for changes
- Using the SelectionChange event
- Using the BeforeRightClick event

Using Special Application Events

- Using the OnTime event
- Using the OnKey event

Seeing Some VBA Examples

Working with Ranges

- Copying a range
- Copying a variable-size range

- Selecting to the end of a row or column
- Selecting a row or column
- Moving a range
- Looping through a range efficiently
- Prompting for a cell value
- Determining the type of selection
- Identifying a multiple selection
- Counting selected cells
- Working with Workbooks
 - Saving all workbooks
 - Saving and closing all workbooks
- Working with Charts
 - Modifying the chart type
 - Modifying chart properties
 - Applying chart formatting
- VBA Speed Tips
 - Turning off screen updating
 - Preventing alert messages
 - Simplifying object references
 - Declaring variable types
- Creating Custom Excel Add-Ins**
 - Understanding Add-Ins
 - Working with Add-Ins
 - Understanding Why to Create Add-Ins
 - Creating Add-Ins
 - Looking at an Add-In Example
 - Learning about Module
 - Learning about the UserForm
 - Testing the workbook
 - Adding descriptive information
 - Creating the user interface for your add-in macro
 - Protecting the project
 - Creating the add-in
 - Installing the add-in