# **Microsoft Excel 2019**

# **Module 6: Managing Data with Data Tools**

# **A Guide to this Instructor’s Manual:**

We have designed this Instructor’s Manual to supplement and enhance your teaching experience through classroom activities and a cohesive module summary.

This document is organized chronologically, using the same headings in **blue** that you see in the textbook. Under each heading you will find (in order): Lecture Notes that summarize the section, Teacher Tips, Classroom Activities, and Lab Activities. Pay special attention to teaching tips and activities geared toward quizzing your students, enhancing their critical thinking skills, and encouraging experimentation within the software.

In addition to this Instructor’s Manual, our Instructor’s Resources also contains PowerPoint Presentations, Test Banks, and other supplements to aid in your teaching experience.

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**Module Objectives**

Students will have mastered the material in this module when they can:

Section 6.1

* Split a workbook window into panes
* Highlight and remove duplicate values in a data range
* Sort a data range by one or more fields
* Add subtotals to a data range

Section 6.2

* Find and select workbook cells
* Filter data based on one or more fields
* Create an advanced filter
* Convert a data range to an Excel table
* Work with table styles and table elements

Section 6.3

* Create and apply a slicer
* Calculate summary statistics with the SUBTOTAL function
* Design and create an interactive dashboard

**Handling Data in Excel**

LECTURE NOTES

* Discuss how to handle data in excel

CLASSROOM ACTIVITIES

1. Quick Quiz

* The first row of a data range is known as the \_\_\_\_\_\_\_\_\_\_\_ row. (Answer: header)
* What is a data definition table? (Answer: A data definition table lists the fields included with each record, the type of data stored in each field, and a short description of each field.)

1. Class Discussion: What are the guidelines discussed in this module to keep in mind when you set up your worksheet? (Answer: Use short, descriptive field names that are easy to remember and fit more fields in the window without scrolling. Distinguish field names from the data records with different colors and font styles. Break fields into single units of information, such as one field for the city name and another field for the state name. Separate the data range from other information in the worksheet with at least one blank row and one blank column.)

**Using Panes to View Data**

LECTURE NOTES

* Show how to divide the workbook Windows into panes
* Describe how to freeze panes

TEACHER TIP

You can remove panes by double-clicking the split bar.

CLASSROOM ACTIVITIES

1. Quick Quiz

* True/False: Excel can split the workbook window into three sections, called panes. (Answer: False, four sections)
* To split the workbook window, click any cell or range in the worksheet and then on the \_\_\_\_\_ tab, click the Split button. (Answer: View)
* True/False: You can split the window into vertical panes. (Answer: True)
* When you \_\_\_\_\_\_ a pane, its contents are always visible though you cannot scroll within it. (Answer: freeze)

**Locating Duplicate Records**

LECTURE NOTES

* Describe how to highlight duplicate values
* Show how to remove duplicate records

TEACHER TIP

The conditional formatting rule will highlight duplicate values even if they are not adjacent to each other.

CLASSROOM ACTIVITIES

1. Quick Quiz

* You can use \_\_\_\_\_\_\_\_\_\_\_ formatting to locate a duplicate record by highlighting duplicate values with a selected range. (Answer: conditional)
* Which tool would you use to locate and delete records that are duplicated across multiple fields? (Answer: Remove Duplicates)

**Sorting Records in a Data Range**

LECTURE NOTES

* Describe how to sort by a single field
* Discuss how to sort by multiple fields
* Show how to sort with a custom list

TEACHER TIP

You can select any cell in a data column to sort the rows by the values in that column.

CLASSROOM ACTIVITIES

1. Quick Quiz

* True/False: By default, records appear in ascending order. (Answer: False)
* Sorting records from Z to A is \_\_\_\_\_\_\_\_\_\_\_\_\_ order. (Answer: descending)
* A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ arranges field values in the order you specify. (Answer: custom list)

1. Class Discussion: What is the difference between primary sort field and secondary sort field? (Answer: A primary sort field initially sorts the data and the secondary sort field sorts data within the primary sort field.)

**Calculating Subtotals**

LECTURE NOTES

* Describe how to create a subtotal row
* Discuss how to use the subtotal outline view

CLASSROOM ACTIVITIES

1. Quick Quiz

* \_\_\_\_\_\_\_\_\_ are summary functions that are applied to a part of a data range. (Answer: Subtotals)
* The \_\_\_\_\_\_\_\_\_ tool lets you control the level of detail displayed in the worksheet. (Answer: outline)
* True/False: You can create outlines with any data range. (Answer: True)

**Locating Cells Within a Worksheet**

LECTURE NOTES

* Discuss how to find and select multiple cells
* Show how to find cells by type

CLASSROOM ACTIVITIES

1. Quick Quiz

* Find and \_\_\_\_\_\_ can locate cells that match a specified criterion. (Answer: Select)

**[Filtering Data](#FM2)**

LECTURE NOTES

* Explain how to filter based on one field
* Explain how to filter based on multiple fields
* Discuss how to use criteria filters
* Explain how to clear filters
* Show how to apply an advanced filter

TEACHER TIP

Be sure to go over Figure 6-20, which shows the filtering options. Explain that the options would be different depending on the field on which they want to apply a filter.

Be sure students understand that these records are not removed from the list and, therefore, can be redisplayed simply by removing the filter.

CLASSROOM ACTIVITIES

1. Quick Quiz:

* True/False: Filtering data hides the rows whose values do not match the search criteria. (Answer: True)
* True/False. You can add filter buttons to a data range or table in the Sort & Filter group on the Data tab. (Answer: True)
* When you want to see all the data in a filtered table, you can \_\_\_\_\_\_\_ the filters. (Answer: clear)
* \_\_\_\_\_\_\_\_\_\_\_\_ filtering provides a way of writing more complicated filter criteria that involve expression that combine fields using the AND and OR logical operators. (Answer: Advanced)

**Creating an Excel Table**

LECTURE NOTES

* Demonstrate how to create an Excel table
* Discuss how to convert a range to a table
* Describe how to use table styles
* Show how to add a total row
* Show how to add and delete records
* Discuss how to create a calculated field
* Discuss structural references and Excel tables

TEACHER TIP

Excel tables provide many advantages to structured ranges of data. When you create an Excel table, you can perform the same operations as you can for a structured range of data.

CLASSROOM ACTIVITIES

1. Quick Quiz

* True/False: You cannot add subtotals to an Excel table. (Answer: True)
* What are the structural elements of an Excel table? (Answer: Header row, total row, first column, last column, banded rows, banded columns, and filter buttons)

**Filtering Data with Slicers**

LECTURE NOTES

* Discuss how to filter data with slicers

CLASSROOM ACTIVITIES

1. Quick Quiz

* True/False: Slicers can be used with data ranges. (Answer: False)
* A \_\_\_\_\_\_\_\_\_\_ is an object containing a button for each unique value from a field. (Answer: slicer)
* What are two ways to filter data in an Excel table? (Answer: Slicers and filter buttons)
* Use a \_\_\_\_\_ button when you need to use criteria filters involving text, date, or numeric values. (Answer: filter)

**Creating a Dashboard**

LECTURE NOTES

* Discuss how to create a dashboard
* Show how to format a slicer
* Describe how to use the SUBTOTAL function
* Show how to create dynamic charts
* Discuss how to look up data with Tables

CLASSROOM ACTIVITIES

1. Quick Quiz

* A \_\_\_\_\_\_\_\_\_\_ is a page or screen providing information visuals of data, key performance indicators, and statistics. (Answer: dashboard)
* True/False: You cannot cut and paste slicers between worksheets. (Answer: False)
* True/False: You cannot cut and paste slicers between workbooks. (Answer: True)
* True/False: By default, slicer buttons are arranged in a single column. (Answer: True)
* What function number correlates to the COUNTA function? (Answer: 3)
* What is a boxplot? (Answer: A boxplot is a schematic diagram of the distribution in which the location of the central 50% of the data is displayed as a box with edges at the 25th and 75th percentiles.)

1. Class Discussion: What are the design tips discussed in this module to keep in mind when designing a dashboard? (Answer: Elaborate on the following: Go big, Go bold. Start from the upper-left corner. Keep it simple. Don’t let color overwhelm. Make it intuitive. Be focused.)

**End of Module Material**

* **Review Assignments:** Review Assignments provide students with additional practice of the skills they learned in the module using the same module case, with which they are already familiar. These assignments are designed as straight practice and do not include anything of an exploratory nature.
* **Case Problems:** A typical NP module has four Case Problems following the Review Assignments. Short modules can have fewer Case Problems (or none at all); other modules may have five Case Problems. The Case Problems provide further hands-on assessment of the skills and topics presented in the module, but with new case scenarios. There are five types of Case Problems:
* **Apply**. In this type of Case Problem, students apply the skills that they have learned in the module to solve a new problem.
* **Create**. In a Create Case Problem, students are either shown the end result (such as a finished Word document) and asked to create the document based on the figure provided, or, students are asked to create something from scratch in a more free-form manner.
* **Challenge**. A Challenge Case Problem involves one or more Explore steps. These steps challenge students by having them go beyond what was covered in the module, either with guidance in the step or by using online Help as directed.
* **Research**. A Research Case Problem requires students to find information on the Internet to help solve a problem or to include in the file they are creating.
* **Troubleshoot**. In this type of Case Problem, certain steps of the exercise require students to identify and correct errors that are intentionally placed in the files. Completing these steps helps to promote problem solving and critical thinking.

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