

APPENDIX **A**

Working with Excel Data Tables

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A.1 What is an Excel Data Table

An Excel table is a powerful tool for organizing and managing related data within Excel. By converting a range of cells into a table, you unlock useful features like automatic sorting, filtering, and the ability to quickly add rows or columns. This structured format simplifies data analysis, charting, and referencing, as each table is assigned a unique name. Excel tables also dynamically adjust to changes, making them ideal for handling evolving datasets efficiently.

Data tables offer several valuable features that are not available in the traditional range format.

- *Add New Data.*

Excel tables are dynamic, automatically expanding as new data is added. Unlike traditional ranges, these tables adjust their size and range in real-time when data is added or removed. This ensures that any linked formulas or charts are instantly updated to reflect the latest changes, making data management more efficient and seamless.

- *Filter function*

You can also apply filters to a data column to control which cells are included in the table, allowing for more focused analysis.

- *Structured References.*

Excel data tables can improve automatic naming, making data management more efficient. When you create a table in

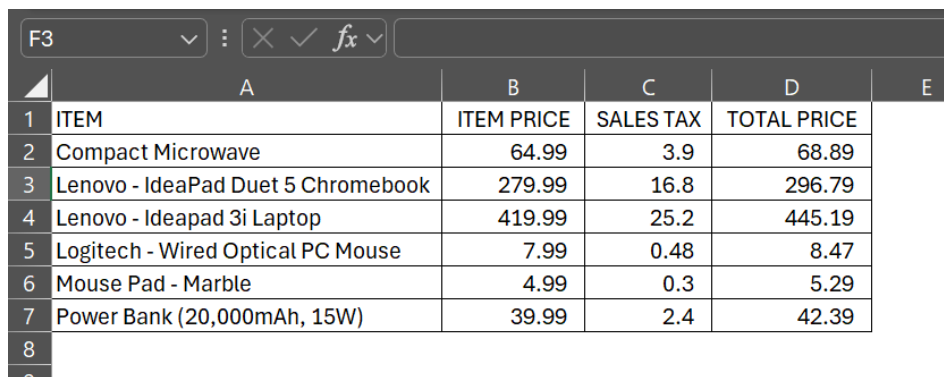
Excel, the program automatically assigns a unique name to the table, which can be customized if needed. This feature simplifies referencing the table elements in formulas, making them more readable and easier to manage.

A.2 How to Create a Data Table in Excel?

Creating a data table in Excel is simple. Follow these steps:

1 Start with a Simple Table

Figure A.1 shows the traditional ranged table. It is a simple table created and managed by you. It is sufficient for a static dataset, which will not change often and on which you will perform straightforward tasks.

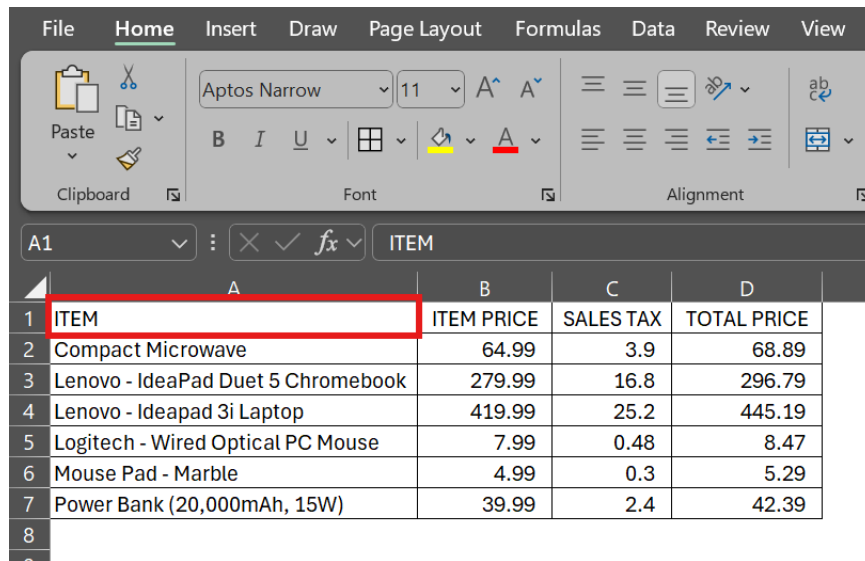


	A	B	C	D	E
1	ITEM	ITEM PRICE	SALES TAX	TOTAL PRICE	
2	Compact Microwave	64.99	3.9	68.89	
3	Lenovo - IdeaPad Duet 5 Chromebook	279.99	16.8	296.79	
4	Lenovo - Ideapad 3i Laptop	419.99	25.2	445.19	
5	Logitech - Wired Optical PC Mouse	7.99	0.48	8.47	
6	Mouse Pad - Marble	4.99	0.3	5.29	
7	Power Bank (20,000mAh, 15W)	39.99	2.4	42.39	
8					

Figure A.1: Example of a Simple Ranged Table

2 Select any cell within the simple table

I selected Cell A1 as shown in Figure A.1. Alternatively, you would select any other cell within your data range.



The screenshot shows the Microsoft Excel interface with the 'Home' tab selected. The ribbon includes options for Clipboard, Font, and Alignment. The active cell is A1, which contains the text 'ITEM'. The data table below is as follows:

	A	B	C	D
1	ITEM	ITEM PRICE	SALES TAX	TOTAL PRICE
2	Compact Microwave	64.99	3.9	68.89
3	Lenovo - IdeaPad Duet 5 Chromebook	279.99	16.8	296.79
4	Lenovo - Ideapad 3i Laptop	419.99	25.2	445.19
5	Logitech - Wired Optical PC Mouse	7.99	0.48	8.47
6	Mouse Pad - Marble	4.99	0.3	5.29
7	Power Bank (20,000mAh, 15W)	39.99	2.4	42.39
8				

Figure A.2: Selecting a cell within your data range

3 Open the “Create Table” window

In this step, open the “Create Table” window either by pressing CTRL+T, or selecting the “Table” option from the “Insert” tab, as shown in Figure A.3. Alternatively, you can navigate to the “Home” tab and select the “Format as Table” icon in the “Styles” section. From there, you can choose from a wide variety of built-in table styles offered by Excel.

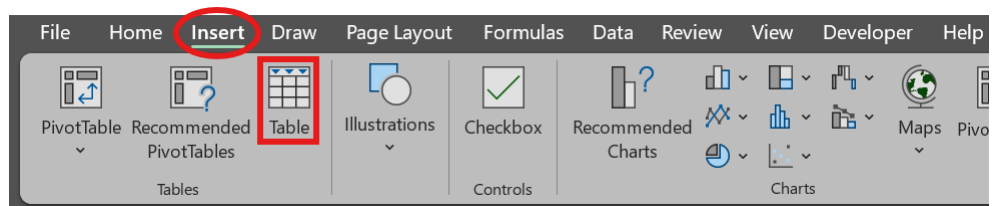


Figure A.3: Opening the Create Table Dialog Box

4 *Customize the table and confirm settings*

In the Create Table window, you’ll see a field labeled “Where is the data for your table?” displaying the cell range you selected, formatted as:

`$(ColumnLetter)$(RowNumber):$(ColumnLetter)$(RowNumber)`

Figure A.4 illustrates that Excel has automatically selected all cells between A1 and D7, as indicated by the data range box displaying `=A1:D7`.

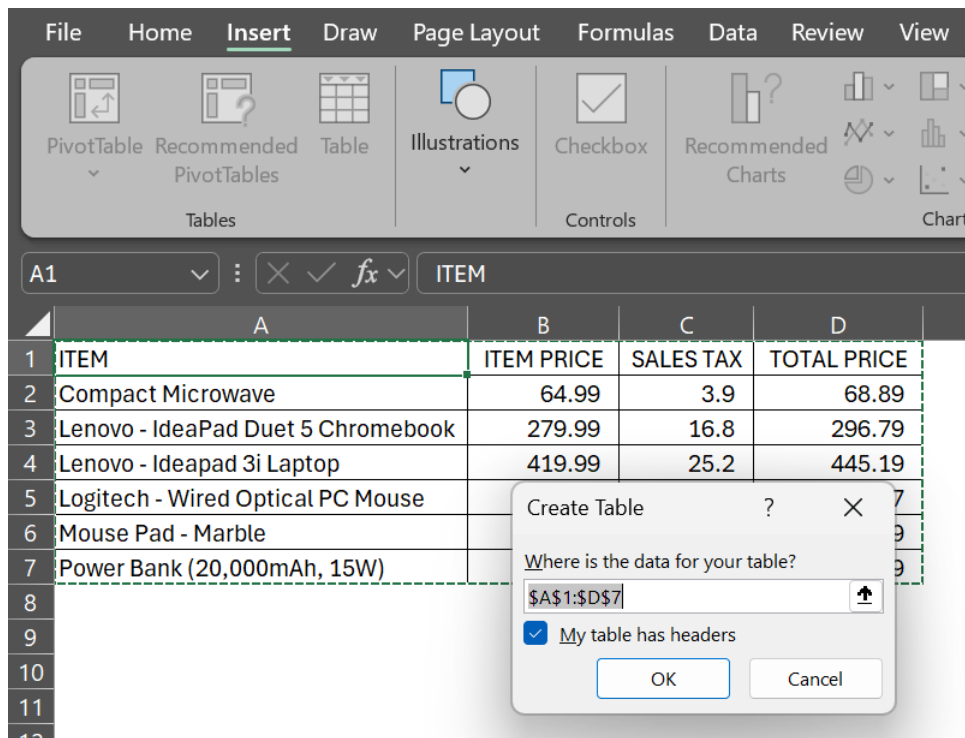
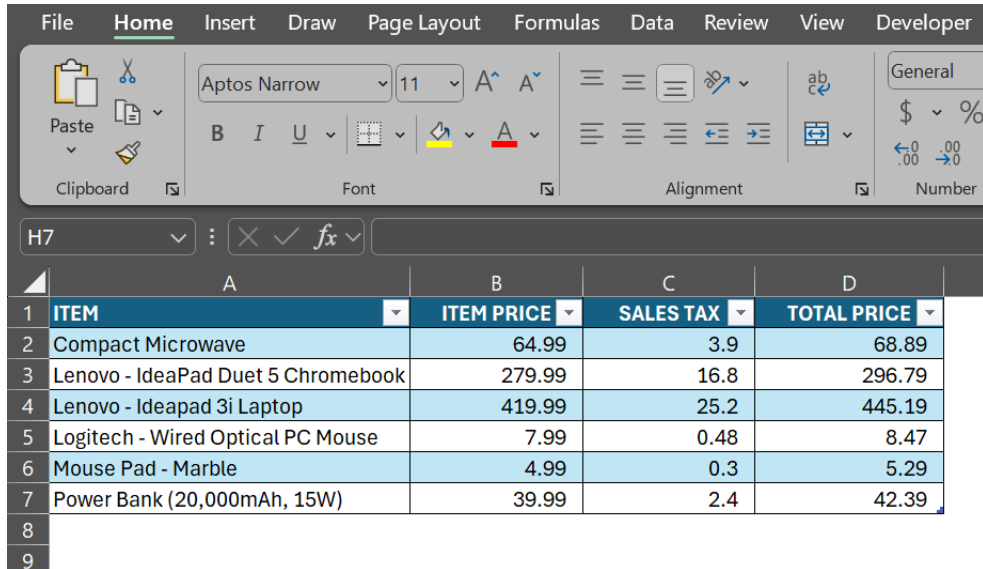


Figure A.4: Confirming or changing the range of cells that defines your Excel data table

You can adjust the cell range here if needed. Additionally, there’s a checkbox for “My table has headers.” If your data

already includes headers, check this box. Otherwise, Excel will create generic headers that you can edit later. Once satisfied with the settings, click OK to create the Excel data table of Figure A.5.



	A	B	C	D
1	ITEM	ITEM PRICE	SALES TAX	TOTAL PRICE
2	Compact Microwave	64.99	3.9	68.89
3	Lenovo - IdeaPad Duet 5 Chromebook	279.99	16.8	296.79
4	Lenovo - Ideapad 3i Laptop	419.99	25.2	445.19
5	Logitech - Wired Optical PC Mouse	7.99	0.48	8.47
6	Mouse Pad - Marble	4.99	0.3	5.29
7	Power Bank (20,000mAh, 15W)	39.99	2.4	42.39
8				
9				

Figure A.5: Your final Excel data table

Figure A.5 shows what your typical Excel data table looks like. Note the filter controls that are automatically added to the table headers. You can use them to temporarily hide some rows so that you can focus on a subset of your data.

5 Edit and adjust the table

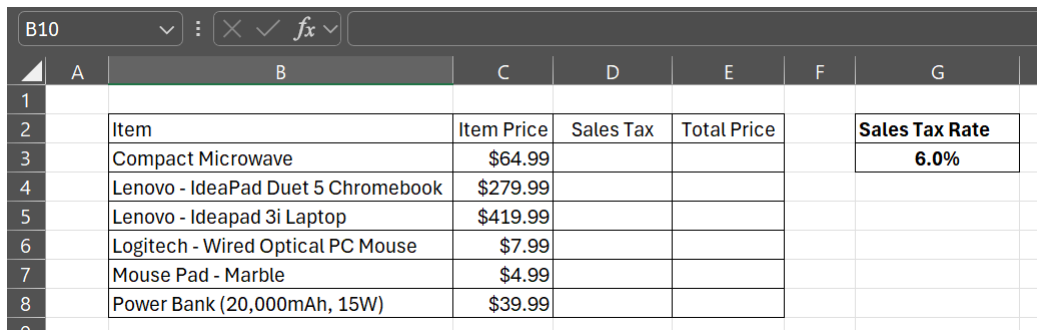
After creating your table, you can modify its content and structure. Double-click any cell to edit it. To resize the table, use the small blue arrow at the bottom-right corner - drag it to add more rows or columns.

A.3 Creating a Named Range in Excel

When working with spreadsheets, dealing with multiple cell ranges is inevitable. Many of these ranges are used repeatedly for various calculations. Fortunately, Excel offers a feature called “Named Ranges,” which makes managing and reusing these ranges easier.

Using a Named Range simplifies your formulas, making them easier to understand and maintain. You can assign a name to a range of cells, a function, a constant, or a table.

Let’s now work with the table shown in Table ???. Our goal is to calculate the “Sales Tax” for each item using the 6% tax rate found in cell G3 and to populate the “Total Price” amounts accordingly.



	A	B	C	D	E	F	G
1							
2		Item	Item Price	Sales Tax	Total Price		Sales Tax Rate
3		Compact Microwave	\$64.99				6.0%
4		Lenovo - IdeaPad Duet 5 Chromebook	\$279.99				
5		Lenovo - Ideapad 3i Laptop	\$419.99				
6		Logitech - Wired Optical PC Mouse	\$7.99				
7		Mouse Pad - Marble	\$4.99				
8		Power Bank (20,000mAh, 15W)	\$39.99				

Figure A.6: List of Items Purchased from an Electronic Store

STEP 1: Creating the ItemPrice Named Range

Highlight all Item Price amounts as shown in Figure A.7, and type in the “ItemPrice” in the Name Box located in the top-left

corner. Let’s repeat the same procedure by creating the “SalesTaxRate” name as shown in Figure A.8. From now on, the word SalesTaxRate will refer to the content of cell G3.

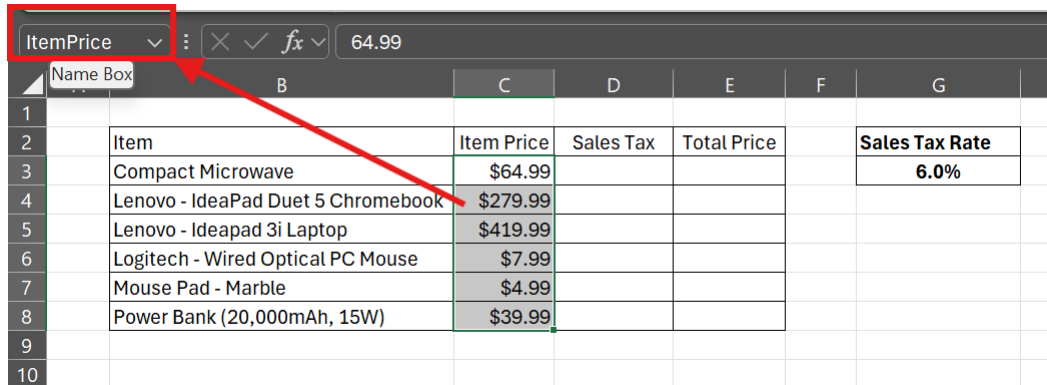


Figure A.7: Naming the List of Item Prices

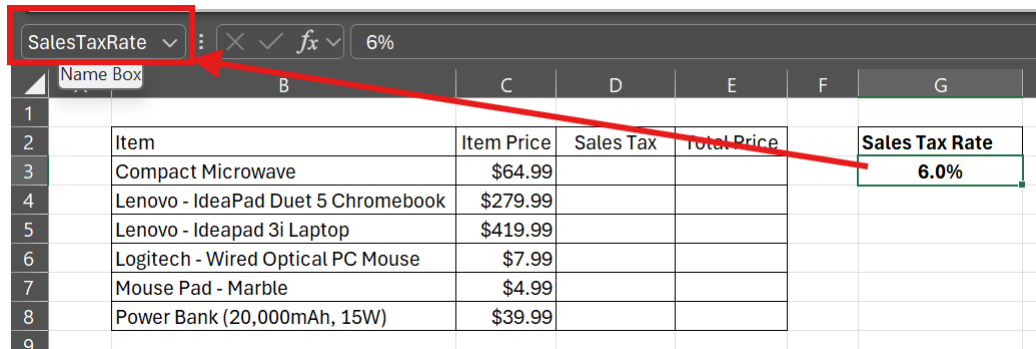


Figure A.8: Naming the Sales Tax Rate

STEP 2: Calculating the “Sales Tax” for each Item.

To calculate the “Sales Tax” column, you need to type in the formula `SalesTax * ItemPrice` in cell D3 as shown in Figure A.9. Then press ENTER, and the entire “Sales Tax” column will

be populated as seen in Figure ??.

	A	B	C	D	E	F	G
1							
2		Item	Item Price	Sales Tax	Total Price		Sales Tax Rate
3		Compact Microwave	\$64.99	=SalesTaxRate*ItemPrice			6.0%
4		Lenovo - IdeaPad Duet 5 Chromebook	\$279.99				
5		Lenovo - Ideapad 3i Laptop	\$419.99				
6		Logitech - Wired Optical PC Mouse	\$7.99				
7		Mouse Pad - Marble	\$4.99				
8		Power Bank (20,000mAh, 15W)	\$39.99				
9							

Figure A.9: Entering the Formula for Calculating the Sales Tax

	A	B	C	D	E	F	G
1							
2		Item	Item Price	Sales Tax	Total Price		Sales Tax Rate
3		Compact Microwave	\$64.99	\$3.90			6.0%
4		Lenovo - IdeaPad Duet 5 Chromebook	\$279.99	\$16.80			
5		Lenovo - Ideapad 3i Laptop	\$419.99	\$25.20			
6		Logitech - Wired Optical PC Mouse	\$7.99	\$0.48			
7		Mouse Pad - Marble	\$4.99	\$0.30			
8		Power Bank (20,000mAh, 15W)	\$39.99	\$2.40			

Figure A.10: The Amount of Sales Tax for all 6 Items

	A	B	C	D	E	F	G
1							
2		Item	Item Price	Sales Tax	Total Price		Sales Tax Rate
3		Compact Microwave	\$64.99	\$3.90			6.0%
4		Lenovo - IdeaPad Duet 5 Chromebook	\$279.99	\$16.80			
5		Lenovo - Ideapad 3i Laptop	\$419.99	\$25.20			
6		Logitech - Wired Optical PC Mouse	\$7.99	\$0.48			
7		Mouse Pad - Marble	\$4.99	\$0.30			
8		Power Bank (20,000mAh, 15W)	\$39.99	\$2.40			

Figure A.11: Naming of the Sales Tax Column

	A	B	C	D	E	F	G
1							
2		Item	Item Price	Sales Tax	Total Price		Sales Tax Rate
3		Compact Microwave	\$64.99	\$3.90	=ItemPrice + SalesTax		
4		Lenovo - IdeaPad Duet 5 Chromebook	\$279.99	\$16.80			
5		Lenovo - Ideapad 3i Laptop	\$419.99	\$25.20			
6		Logitech - Wired Optical PC Mouse	\$7.99	\$0.48			
7		Mouse Pad - Marble	\$4.99	\$0.30			
8		Power Bank (20,000mAh, 15W)	\$39.99	\$2.40			
9							

Figure A.12: Entering the Formula to Compute the Item Total Price

	A	B	C	D	E	F	G
1							
2		Item	Item Price	Sales Tax	Total Price		Sales Tax Rate
3		Compact Microwave	\$64.99	\$3.90	\$68.89		6.0%
4		Lenovo - IdeaPad Duet 5 Chromebook	\$279.99	\$16.80	\$296.79		
5		Lenovo - Ideapad 3i Laptop	\$419.99	\$25.20	\$445.19		
6		Logitech - Wired Optical PC Mouse	\$7.99	\$0.48	\$8.47		
7		Mouse Pad - Marble	\$4.99	\$0.30	\$5.29		
8		Power Bank (20,000mAh, 15W)	\$39.99	\$2.40	\$42.39		
9							

Figure A.13: Items' Total Prices

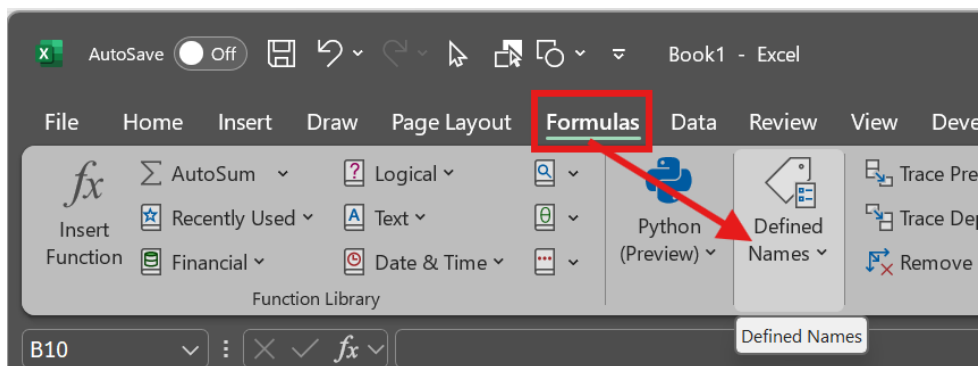


Figure A.14: Launching the Name Manager

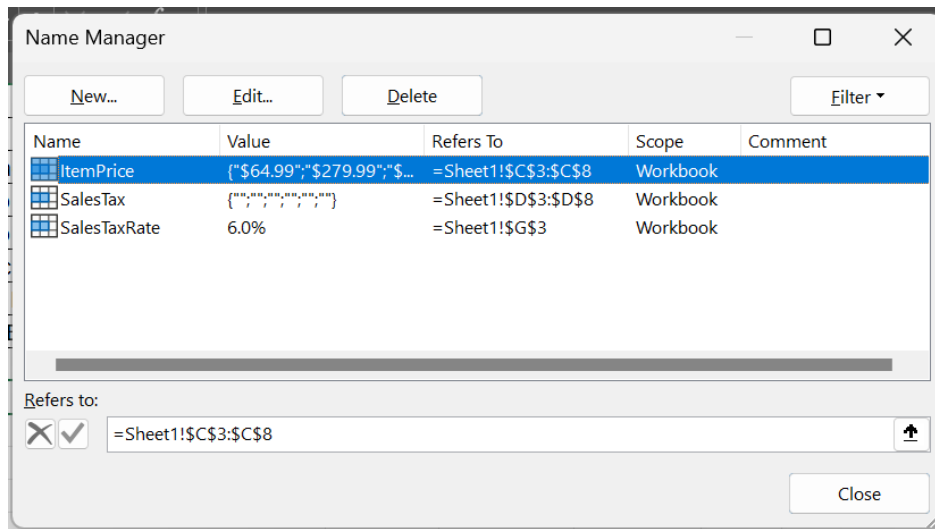


Figure A.15: Exploring the Name Manager

