

M365 Excel Basics Video 07: Create Summary Reports Using PivotTables and Adding Slicers

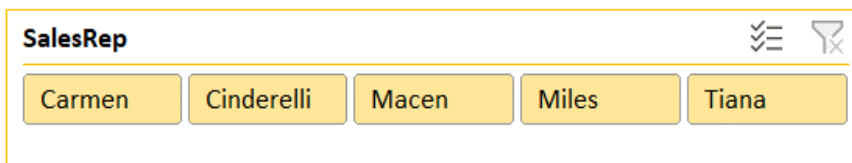
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Topics covered in the M365 Excel Basics Video 7:

❖ PivotTables

- Compare the SUMIFS and PivotTables
- Create summary reports using PivotTables
- PivotTable Report Layout
- PivotTable Styles
- Adding Slicers



Sum of Revenue	Region					
Product	Central	North	NorthWest	South	West	Grand Total
Hot Wheels	\$66,879.29	\$51,685.43	\$68,882.43	\$57,888.34	\$64,433.83	\$309,769.32
LOL OMG Surprise	\$55,034.27	\$56,343.45	\$51,423.62	\$68,403.68	\$74,925.76	\$306,130.78
LOL Surprise	\$66,141.73	\$54,423.57	\$44,945.34	\$49,296.46	\$49,117.58	\$263,924.68
Monster Trucks	\$32,941.99	\$20,011.74	\$25,411.23	\$21,449.78	\$24,665.10	\$124,479.84
Rainbow High Dolls	\$49,057.46	\$54,129.80	\$58,730.89	\$48,969.06	\$77,513.99	\$288,401.20
Stuffed Animals/Bears	\$43,134.26	\$42,090.71	\$19,057.11	\$39,101.57	\$24,316.86	\$167,700.51
Grand Total	\$313,189.00	\$278,684.70	\$268,450.62	\$285,108.89	\$314,973.12	\$1,460,406.33

***Keyboard shortcut for creating a PivotTable report: ALT, N, V, T

PivotTable

A PivotTable is one of the most useful and powerful Excel tools to calculate, summarize, and analyze data that lets you see the comparisons, patterns, and trends in your data. The PivotTable does not change the data in your spreadsheet, but you use this as a tool to summarize your data to obtain a desired report. Pivot means turns thus we pivot the data and view it in our desired different perspectives.

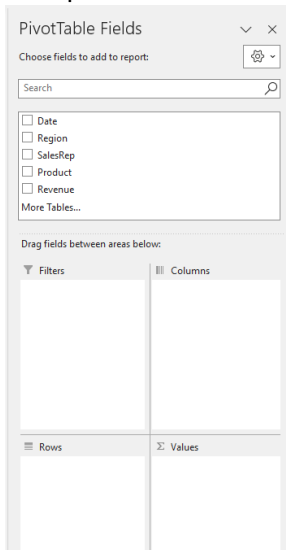
A PivotTable included the following four primary areas:

Rows Area – the rows area displays the category of values from one or more fields arranged in separate rows

Columns Area – the columns area displays categories from one or more fields arranged in separate columns

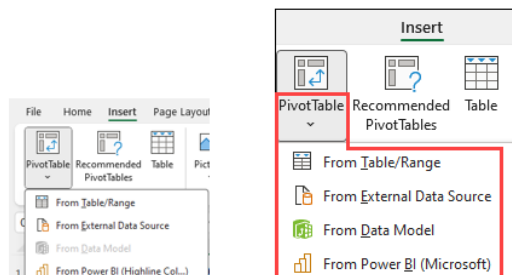
Values Area – the values area is to summarize statistics for one or more fields at each intersection of each row and column category, for example: SUM, COUNT, AVERAGE.

Filter Areas – the filter area contains a filter button that limits the PivotTable to only those values matching the specified criteria/condition.

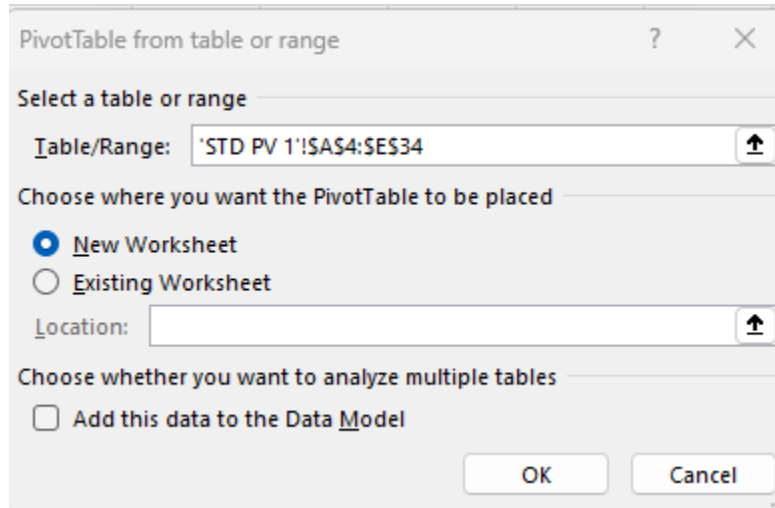


Create a Pivot Table:

1. Select the cells you want to create a PivotTable from.
 - **Note:** Your data should be organized in columns with a single header row
2. Select **Insert > PivotTable**.
 - Keyboard shortcut to create a standard PivotTable:
 1. Data from the Table: ALT, N, V, T
 2. Data from Data Model: ALT, N, V, D



This creates a PivotTable based on an existing table or range.



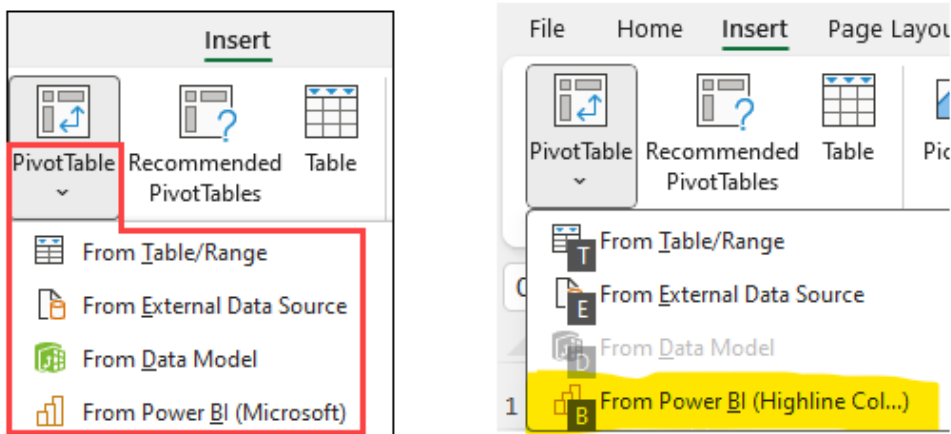
Choose where you want the PivotTable report to be placed. Select **New Worksheet** to place the PivotTable in a new worksheet or **Existing Worksheet** and select where you want the new PivotTable to appear.

Note: Selecting **Add this data to the Data Model** adds the table or range being used for this PivotTable into the workbook's Data Model.

3. Select **OK**.

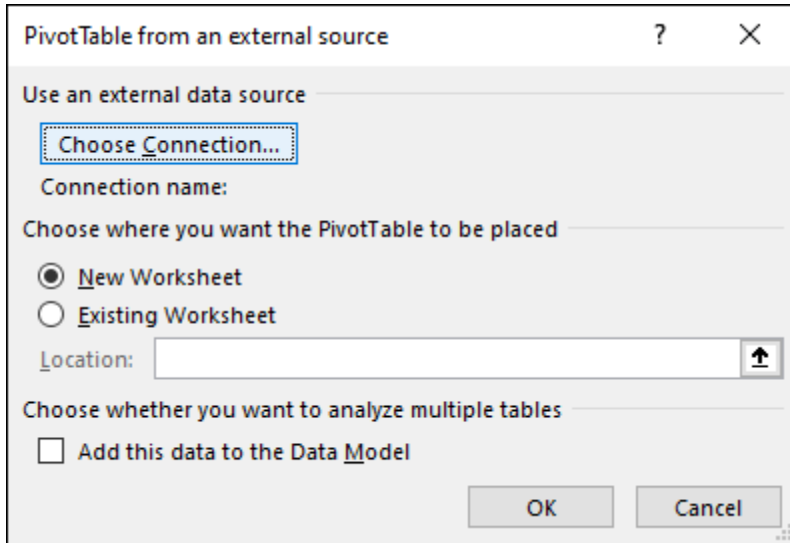
Create PivotTable from other sources:

By clicking the down arrow on the button, you can select from other possible sources for your PivotTable. In addition to using an existing table or range, there are three other sources you can select from to populate your PivotTable.



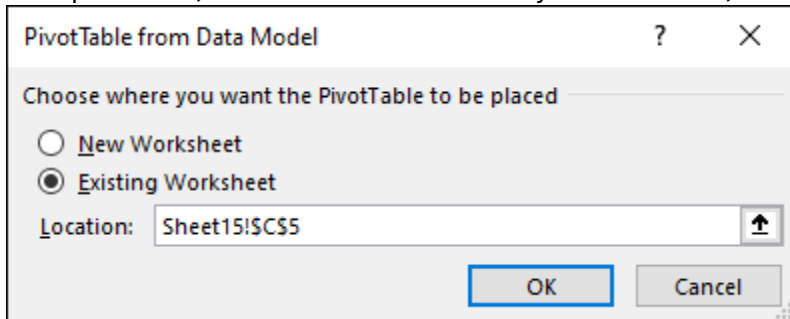
Note: Depending on your organization's IT settings you might see your organization's name included in the list. For example, "From Power BI (Microsoft)" or for us at Highline "From Power BI (Highline Col...)".

Get from External Data Source



Get from Data Model

Use this option if your workbook contains a Data Model and you want to create a PivotTable from multiple tables, use custom measures for your PivotTable, or are working with very large datasets.



Get from Power BI

Use this option if your organization uses Power BI and you want to discover and connect to cloud datasets you have access to.

Why use Pivot Tables:

You can use a PivotTable to summarize, analyze, explore, and present summary data. You use the Pivot Charts to visualize the summarized data in the PivotTable and these allow us to see the patterns, comparisons and the trends on your data. The PivotTable and the Pivot Charts will enable you to make informed decisions about the company data being summarized.

Thus, a PivotTable is an interactive way that one can use to quickly summarize a large amount of data.

To insert a Pivot Chart:

1. Select in one cell of the Standard PivotTable that that you would like to visualize
2. Go to the Insert Ribbon Tab, and on the Charts Group, click on the PivotChart button arrow and select the click on the PivotChart to insert the PivotChart

Or

1. Select in one cell of the Standard PivotTable that that you would like to visualize
2. Go to the PivotTable Analyze Ribbon Tab, and on the Tools Group, click on the PivotChart button to insert the PivotChart

What does a PivotTable do:

- Query large amounts of data.
- Summarize data by categories and subcategories and create custom calculations. Create Summary Reports that contain calculations with Conditions or Criteria.
- Expanding and collapsing levels of data to focus your results on details from the summary data for areas of interest to you.
- Moving rows to columns or columns to rows (or "pivoting") to see different summaries of the source data.
- Filtering, sorting, grouping, and conditionally formatting the most useful and interesting subset of data enabling you to focus on just the information you want.
 - We also use the Slicers to Filter (In this class we will not use the Filter area of the PivotTable, but we will create a slicer to filter our data).
- Presenting concise and attractive online or printed reports.

Standard PivotTable vs. Data Model PivotTable.

A **Standard PivotTable** stores its data in the PivotTable cache. You can use a standard PivotTable for data that is stored in one small table (about 50,000 rows of data or less) and/or when you want to summarize your data with simple calculations such as sum, count, averages, Running total, % of column totals or % of grand total.

A **Data Model PivotTable** stores its data in the Power Pivot Data Model Columnar Database. This is best when you have a large amount of data, you have multiple related tables, or you want to make calculations that a Standard PivotTable cannot easily make.

Summary of how to create PivotTable:

- 1) Click in one cell in Proper Data Set
- 2) Insert Ribbon Tab, Tables group, PivotTable button.
 - a. Keyboard = Alt, N, V, T.
- 3) From Field List, drag field name to Rows area or Columns area or Filter area. These are the conditions/criteria for the calculation in the Values area of the PivotTable.
 - a. Fields in the Rows area add a condition/criterion to the row
 - b. Fields in the Columns area add a condition/criterion to the column
 - c. Fields in the Filter area add a condition/criterion to the entire PivotTable.
- 4) From Field List drag the field you would like to make a calculation on to values area.
 - a. Number fields default to a SUM calculation (add numbers)
 - b. Text fields default to a COUNTA calculation (count non-empty cells)
- 5) With a cell selected in the PivotTable, click on PivotTable Tools Design Ribbon Tab, go to the Layout group, click drop-down for Report Layout and then click on “Show in Tabular Form” or “Show in Outline Form”. These Layouts show the Field Names in your Report.
 - a. To set the layout default for all PivotTable, click on File menu, Options button, in the Excel Options dialog box, click the Data tab on the left, click the Edit Default Layout button, then in Report Layout check box, select “Show in Tabular Form” or “Show in Outline Form”.
- 6) To add Number Formatting to the Values area of the PivotTable:
 - a. Click in one cell in the Values area of the PivotTable
 - b. Right-click the cell and click on “Number Format...”, then in the Number Formatting dialog box select the Number Formatting that you would like and then click OK.
- 7) To name a PivotTable Report:
 - a. Click in any one cell in your PivotTable Report, then go to the PivotTable Analyze Ribbon Tab, then in the PivotTable Group, click on the PivotTable name box and name your PivotTable Report.
Note: *Name your PivotTable report with a name that reflects what data you are summarizing.*
- 8) Slicers can be added to the PivotTable to add a condition/criterion to the entire PivotTable, similar to a field in the Filter area.
- 9) To insert a Slicer into a PivotTable, click in one cell in the PivotTable Report, then go to the PivotTable Tools Analyze Ribbon Tab, then in the Filter Group, click the Insert Slicer button.
 - a. You can also click in one cell in the PivotTable Report, then go to the Insert Ribbon Tab, then in the Filters Group, click the Slicer button.
- 10) If you want to change the summary calculation in the Values area:
 - a. Right-click the Values area in the PivotTable Report and point to one of these two options:
 - i. “Summarize Values By” and then select an aggregate calculation such as “Sum”, “Average”, “Count”, or “More Options”.
 - ii. “Show Values As” and then select a calculation such as “% of Grand Total”, “Running Total”, “% Difference From...”, “Difference From...”, or other calculations.
- 11) If you want to change the style of the PivotTable:
 - a. Click in any one cell in the PivotTable Report, then go to the Design Ribbon Tab, in the PivotTable Styles Group, click on the down arrow to show more styles, select the style of your choice and click on it to apply the style on your PivotTable Report.
- 12) If you want to change the style of the Slicer:
 - a. Click in the Slicer, then go to the Slicer Ribbon Tab, in the Slicer Styles Group, click on the down arrow to show more styles, select the style of your choice and click on it to apply the style on your slicer.

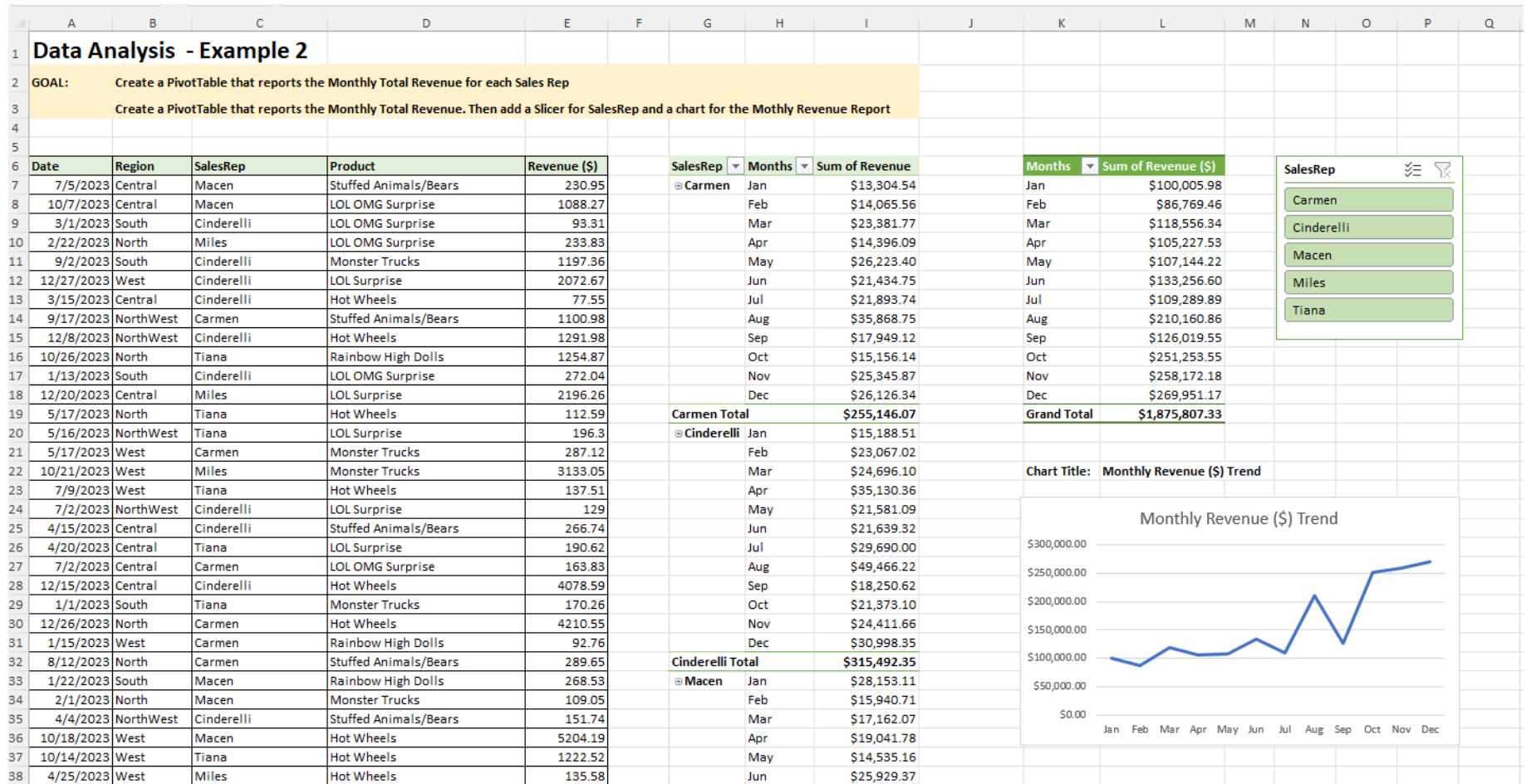
Standard PivotTable Cached Data

- When you create a Standard PivotTable, Excel creates a copy of the source data and stores it in the Pivot Cache. The Pivot Cache is stored in Excel's memory. This is why the PivotTable does not update when source data changes.
 - If source data changes, you can right-click the PivotTable and click Refresh, or use the Refresh button in the Data Ribbon Tab.
 - Keyboard shortcut to refresh a PivotTable is ALT+F5 to refresh multiple PivotTables is CTRL+ALT+F5
- You can't see Cached PivotTable Data, but that's the data the PivotTable references when you build your PivotTable or change a Slicer selection or move rows/columns around.
- When we group dates in a PivotTable, the Pivot Cache is where this action takes place. The Pivot Cache saves the action of grouping by dates so that when we use the date column in other places, the date column will remain grouped.
- When we use a Slicer or change the conditions and criteria in the PivotTable, these actions are interacting with the Pivot Cache of data, not the original source data.

Calculations Examples:

	A	B	C	D	E	F	G	H	I	J	K
1	PivotTable - Example 1										
2	GOAL: Create PivotTables: Count of Region, Average of Sales and Sum of Sales										
3											
4	Date	Region	SalesRep	Product	Revenue						
5	8/24/2023	Central	Miles	Hot Wheels	\$23,935.30						
6	8/23/2023	Central	Cinderelli	LOL Surprise	\$46,241.84		Region	Count of Region			
7	8/7/2023	South	Tiana	LOL Surprise	\$20,003.13		Central	8			
8	8/11/2023	South	Tiana	Hot Wheels	\$24,148.61		North	5			
9	8/26/2023	Central	Miles	Hot Wheels	\$43,173.32		NorthWest	6			
10	8/22/2023	NorthWest	Miles	LOL OMG Surprise	\$23,553.65		South	11			
11	8/26/2023	South	Tiana	Hot Wheels	\$26,863.98		Grand Total	30			
12	8/15/2023	North	Miles	LOL OMG Surprise	\$35,320.76						
13	8/6/2023	South	Cinderelli	Hot Wheels	\$15,196.59						
14	8/11/2023	South	Tiana	LOL Surprise	\$48,533.17		Region	Sum of Revenue			
15	8/19/2023	NorthWest	Cinderelli	LOL Surprise	\$30,517.67		Central	\$285,677.02			
16	8/10/2023	NorthWest	Tiana	LOL OMG Surprise	\$22,962.38		North	\$173,714.41			
17	8/5/2023	South	Cinderelli	LOL OMG Surprise	\$26,230.06		NorthWest	\$165,386.66			
18	8/11/2023	North	Cinderelli	LOL Surprise	\$34,445.91		South	\$338,667.26			
19	8/10/2023	North	Cinderelli	LOL OMG Surprise	\$41,175.59		Grand Total	\$963,445.35			
20	8/18/2023	South	Tiana	LOL OMG Surprise	\$28,456.15						
21	8/30/2023	Central	Miles	Hot Wheels	\$46,883.49						
22	8/14/2023	South	Miles	Hot Wheels	\$48,675.77		Region	Average of Revenue			
23	8/6/2023	NorthWest	Tiana	LOL Surprise	\$19,604.95		Central	\$35,709.63			
24	8/20/2023	NorthWest	Miles	LOL Surprise	\$48,922.29		North	\$34,742.88			
25	8/31/2023	South	Tiana	Hot Wheels	\$42,727.99		NorthWest	\$27,564.44			
26	8/2/2023	Central	Cinderelli	LOL OMG Surprise	\$21,408.69		South	\$30,787.93			
27	8/3/2023	Central	Cinderelli	LOL Surprise	\$24,455.63		Grand Total	\$32,114.85			
28	8/8/2023	North	Tiana	Hot Wheels	\$28,107.26						
29	8/26/2023	Central	Cinderelli	Hot Wheels	\$45,728.49						
30	8/8/2023	North	Miles	Hot Wheels	\$34,664.89						
31	8/28/2023	NorthWest	Miles	Hot Wheels	\$19,825.72						
32	8/2/2023	South	Miles	LOL Surprise	\$38,828.72						
33	8/28/2023	Central	Tiana	LOL Surprise	\$33,850.26						
34	8/26/2023	South	Miles	Hot Wheels	\$19,003.09						
35											

Example 2:



** This example has more data than you can see on this screenshot. Refer to the Excel Workbook file for the entire data.

Example 3:

Date	Region	SalesRep	Product	Revenue
7/5/2023	Central	Macen	Stuffed Animals/Bears	230.95
10/7/2022	Central	Macen	LOL OMG Surprise	88.27
3/1/2023	South	Cinderelli	LOL OMG Surprise	93.31
2/22/2023	North	Miles	LOL OMG Surprise	233.83
9/2/2022	South	Cinderelli	Monster Trucks	197.36
12/27/2022	West	Cinderelli	LOL Surprise	72.67
3/15/2023	Central	Cinderelli	Hot Wheels	77.55
9/17/2022	NorthWest	Carmen	Stuffed Animals/Bears	100.98
12/8/2022	NorthWest	Cinderelli	Hot Wheels	291.98
10/26/2022	North	Tiana	Rainbow High Dolls	254.87
1/13/2023	South	Cinderelli	LOL OMG Surprise	272.04
12/20/2022	Central	Miles	LOL Surprise	196.26
5/17/2023	North	Tiana	Hot Wheels	112.59
5/16/2023	NorthWest	Tiana	LOL Surprise	196.3
5/17/2023	West	Carmen	Monster Trucks	287.12
10/21/2022	West	Miles	Monster Trucks	133.05
7/9/2023	West	Tiana	Hot Wheels	137.51
7/2/2023	NorthWest	Cinderelli	LOL Surprise	129
4/15/2023	Central	Cinderelli	Stuffed Animals/Bears	266.74
4/20/2023	Central	Tiana	LOL Surprise	190.62
7/2/2023	Central	Carmen	LOL OMG Surprise	163.83
12/15/2022	Central	Cinderelli	Hot Wheels	78.59
1/1/2023	South	Tiana	Monster Trucks	170.26
12/26/2022	North	Carmen	Hot Wheels	210.55
1/15/2023	West	Carmen	Rainbow High Dolls	92.76
8/12/2023	North	Carmen	Stuffed Animals/Bears	289.65
1/22/2023	South	Macen	Rainbow High Dolls	268.53
2/1/2023	North	Macen	Monster Trucks	109.05
4/4/2023	NorthWest	Cinderelli	Stuffed Animals/Bears	151.74
10/18/2022	West	Macen	Hot Wheels	204.19
10/14/2022	West	Tiana	Hot Wheels	122.52

Sum of Revenue	Region					Grand Total
Product	Central	North	NorthWest	South	West	
Hot Wheels	\$66,879.29	\$51,685.43	\$68,882.43	\$57,888.34	\$64,433.83	\$309,769.32
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