Macro Programming

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PivotTables & Pivot Charts

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PivotTable

Definition:

A PivotTable is a powerful data summarization tool in Microsoft Excel. It allows users to summarize, reorganize, and analyze large datasets without modifying the original data.

Purpose:

- Rearrange data to compare values differently
- Filter and sort data interactively
- Summarize data using functions: **SUM, AVERAGE, COUNT, MAX, MIN**

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PivotTable

Pivot Table 1

Sales	Sep	Oct	Nov	Total
Apples	**250**	**590**		**840**
John		180		180
Mike		120		120
Pete		290		290
Sally	250			250
Bananas		**430**	**600**	**1030**
John			400	400
Mike			200	200
Pete		180		180
Sally		250		250
Cherries	**580**	**910**		**1490**
John		250		250
Mike	250	330		580
Pete		330		330
Sally	330			330
Oranges		**120**	**720**	**840**
John			120	120
Mike			400	400
Pete		120		120
Sally			200	200
Total	**830**	**2050**	**1320**	**4200**

Pivot Table 2

Month	(All)				
Sales Reseller	Product Apples	Bananas	Cherries	Oranges	Total
John	$180	$400	$250	$120	$950
Mike	$120	$200	$580	$400	$1,300
Pete	$290	$180	$330	$120	$920
Sally	$250	$250	$330	$200	$1,030
Total	**$840**	**$1,030**	**$1,490**	**$840**	**$4,200**

Pivot Table 3

Product	(All)			
Sales Reseller	Month Sep	Oct	Nov	Total
John		$430	$520	$950
Mike	$250	$450	$600	$1,300
Pete		$920		$920
Sally	$580	$250	$200	$1,030
Total	**$830**	**$2,050**	**$1,320**	**$4,200**

Pivot Table

Example:

Imagine you have sales data for multiple stores. You want to find:

- Total sales per store
- Average sales per genre (Fiction, Non-Fiction, Mystery)
- Count of transactions per store

Without a PivotTable, you'd need multiple formulas; with PivotTables, it's **automatic and dynamic**.

PivotChart

Definition:

A PivotChart is a **visual representation of data from a PivotTable**.

Purpose:

- Quickly visualize trends and patterns
- Highlight outliers or unusual data points
- Make reports more interactive and visually appealing

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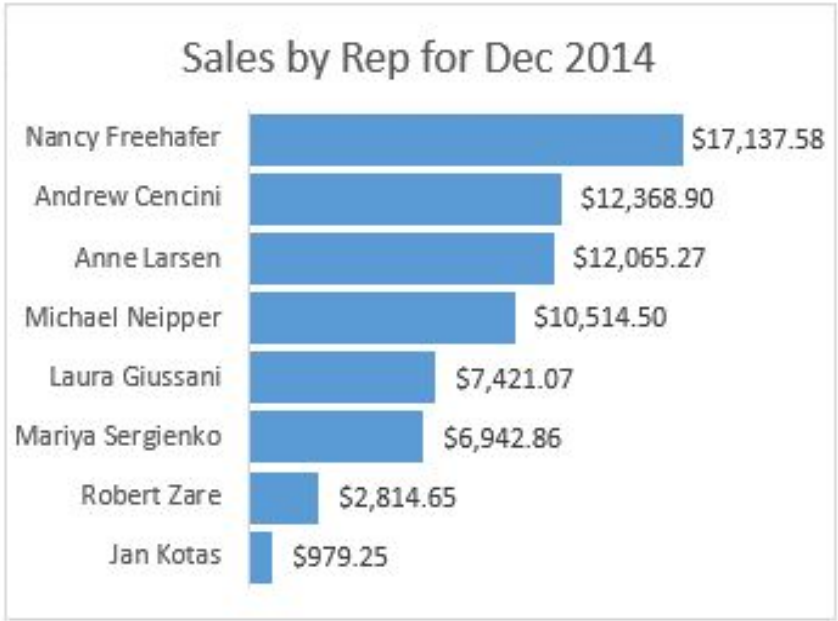
PivotChart

Row Labels	Sum of Revenue
Nancy Freehafer	$17,137.58
Andrew Cencini	$12,368.90
Anne Larsen	$12,065.27
Michael Neipper	$10,514.50
Laura Giussani	$7,421.07
Mariya Sergienko	$6,942.86
Robert Zare	$2,814.65
Jan Kotas	$979.25
Grand Total	**$70,244.08**



PivotChart

Example:

From the same sales data:

- A PivotChart can show total sales by store in a **column chart**
- Sales trends over time can be shown in a **line chart**
- Genre-wise sales distribution can be visualized using a **pie chart**

Importance of PivotTables in Data Analysis

1. Data Summarization:

- Quickly summarize thousands of rows to get total, average, or count.

2. Flexibility & Interactivity:

- Drag-and-drop fields to explore data from different perspectives
- Apply filters and slicers to dynamically adjust views

3. Pattern Recognition:

- Identify trends, seasonal patterns, and top-performing categories

Importance of PivotTables in Data Analysis

4. Efficient Reporting:

- Create concise reports without complex formulas
- Update automatically when source data changes

5. Decision Making:

- Business managers can make informed decisions using summarized insights

Importance of PivotTables in Data Analysis

Example:

- A bookstore wants to know which genre sells most per store.
- Using PivotTables, they instantly see **Fiction is top-selling at Store A**, **Mystery is low at Store C**, etc.

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Importance of PivotTables in Data Analysis

Example Dataset

Store	Genre	Date	Sales Amount
Store A	Fiction	01-Jan-24	$500
Store B	Non-Fiction	02-Jan-24	$300
Store A	Fiction	03-Jan-24	$700
Store C	Mystery	04-Jan-24	$200
Store B	Fiction	05-Jan-24	$600

Observation:

- Multiple stores, multiple genres
- Goal: Summarize sales by store, genre, and date

Steps to Create a PivotTable

Select any cell in the dataset.

Ensure data is **organized in columns with headers**, no blank rows/columns.

Go to **Insert** → **PivotTable**.

In the dialog box:

- Select the data range
- Choose **New Worksheet** or **Existing Worksheet**

Steps to Create a PivotTable

Configure PivotTable Fields:

- **Rows:** Drag `Genre` → Groups data by genre
- **Columns (Optional):** Drag `Store` → Separate data by store
- **Values:** Drag `Sales Amount` → By default, Excel sums values
- **Filters (Optional):** Drag `Date` → Filter data by specific months or ranges

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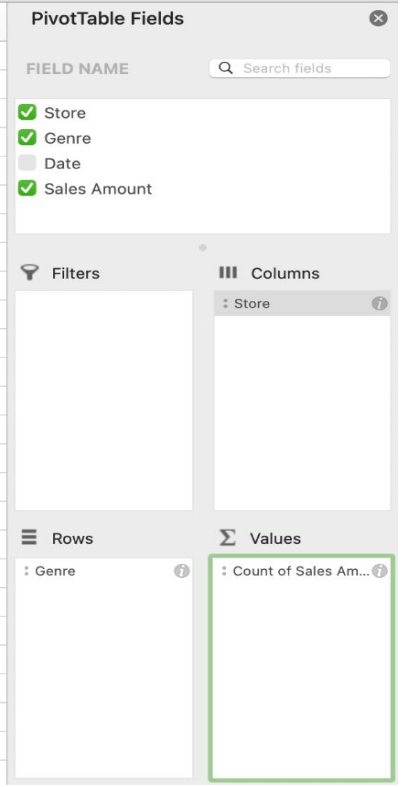
Steps to Create a PivotTable

	A	B	C	D
1	**Store**	**Genre**	**Date**	**Sales Amount**
2	Store A	Fiction	01-Jan-24	$500
3	Store B	Non-Fiction	02-Jan-24	$300
4	Store A	Fiction	03-Jan-24	$700
5	Store C	Mystery	04-Jan-24	$200
6	Store B	Fiction	05-Jan-24	$600

Count of Sales Amount	Column Labels			
Row Labels	**Store A**	**Store B**	**Store C**	**Grand Total**
Fiction	2	1		3
Mystery			1	1
Non-Fiction		1		1
Grand Total	**2**	**2**	**1**	**5**



Customizing PivotTables

1. Layout Modifications:

- Drag and drop fields to rearrange
- Enable **Classic Layout** for more control

2. Formatting Options:

- Apply PivotTable **Styles**
- Customize colors to highlight trends

3. Conditional Formatting:

- Highlight top-performing genres

Customizing PivotTables

Example:

- Fiction sales > $1000 → Highlighted in green
- Mystery sales < $300 → Highlighted in red

Creating PivotCharts

- After PivotTable is ready:
  a. Select the PivotTable
  b. Go to **Insert → PivotChart**
  c. Choose chart type: Column, Line, Pie, Bar, etc.
- PivotCharts are **linked to PivotTables** → Updating data updates chart automatically

Example:

- Column Chart: Sales per store
- Line Chart: Sales trend over dates
- Pie Chart: Genre contribution to total sales

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Creating PivotCharts

Store	Genre	Date	Sales Amount
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Count of Sales Amount	Column Labels			
Row Labels	Store A	Store B	Store C	Grand Total
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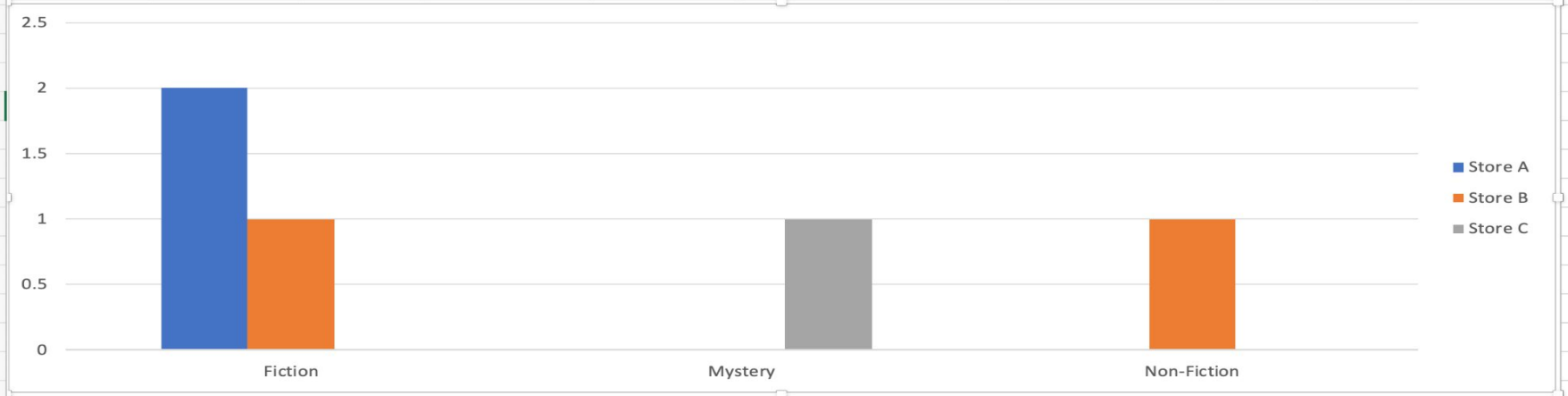
Grand Total	**2**	**2**	**1**	**5**



Summary

- **PivotTables:** Summarize and analyze data efficiently
- **PivotCharts:** Visualize insights and spot trends
- **Features:** Filters, slicers, conditional formatting, dynamic updates
- **Business Benefit:** Faster reporting, better pattern recognition, informed decisions

THANK YOU

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