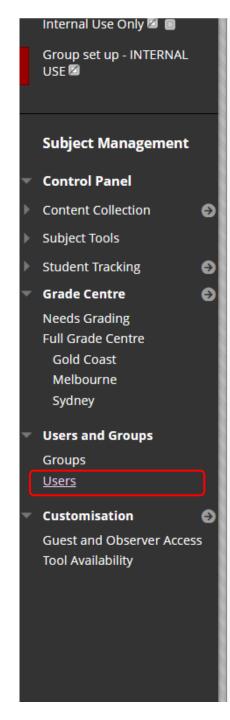
Week 3 – Business Analytics Fundamentals – Sydney Campus



- Summary of Lecture 1
- 2. Tutorial Week 2
- 3. Key assessment dates
- 4. Attendance & Tutorial Questions Recognising student participation and engagement specifically identifying those who are most actively involved!

Lecturer/Tutor: Dr. Farshid Keivanian

The tutorial for Week 2 of Business Analytics Fundamentals at the Sydney Campus dives into the practical use of business analytics with an emphasis on PivotTables in Excel. Students will learn how to set up, structure, and utilize PivotTables to analyze and report on business data effectively. The course illustrates these concepts through an example involving "Aussie Retailers Ltd." and how they use transactional data for inventory management and customer service optimization. Key skills taught include data organization, aggregation, dynamic analysis, and data visualization through PivotTables. The tutorial also covers concepts such as drill-up, drill-down, drill-through, and slice and dice for multidimensional reporting.



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1. Summary of Lecture 1

• The first lecture introduces the role of business analytics in understanding and enhancing business processes through data-driven decision-making. Key topics include the characteristics of business data, the distinction between operational and management reports, and the role of information systems in managing business processes. It also highlights various data sources such as transactional data, human-generated data, and sensor data. A significant emphasis is placed on the structure and use of data in reports, explaining the importance of measures, benchmarks, and key performance indicators (KPIs) for assessing business performance.

1. Summary of Lecture 1: A Practical Example in Australia

- An Australian retail company, "Aussie Retailers Ltd.," utilizes business analytics to optimize its inventory management and customer service. By analyzing transactional data from sales across their stores in Sydney, Melbourne, and Brisbane, they generate management reports that help them understand purchasing trends and customer preferences. These reports compare current sales data to historical data to identify trends, allowing them to tailor their inventory to regional preferences and seasonal demand. Additionally, by leveraging operational reports on daily sales and inventory levels, store managers can make real-time decisions to reorder stock or launch promotions to maximize revenue. The data-driven approach helps Aussie Retailers maintain a competitive edge by ensuring they meet customer needs effectively while managing their supply chain efficiently.
- This example illustrates how business analytics can be practically applied to improve business processes and decision-making within an Australian context.

2. Tutorial Week 2: Concepts

PivotTables: PivotTables are a powerful feature in spreadsheet software like Microsoft Excel or Google Sheets that allow users to summarize and analyze large datasets quickly and efficiently. They work by reorganizing and summarizing selected columns and rows of data into a more digestible format without altering the original dataset. Microsoft Excel requires us to convert the data to table format before we can apply the PivotTable features. In Table format we can perform some simple formatting, such as Filtering to improve the report.

Here's how PivotTables work:

Data Organization: PivotTables allow users to organize and summarize data based on different criteria such as categories, dates, numerical values, etc. Users can choose which columns and rows of data to include in the PivotTable and how they want to arrange and summarize that data.

Aggregation: PivotTables provide various options for aggregating data, including sum, count, average, minimum, maximum, etc. Users can choose the appropriate aggregation function based on the type of data being analyzed.

2. Tutorial Week 2: Concepts

Dynamic Analysis: One of the key advantages of PivotTables is their dynamic nature. Users can easily rearrange the layout of the PivotTable, change the criteria for summarization, and apply filters to focus on specific subsets of data. This flexibility allows for interactive and exploratory data analysis.

Summarization: PivotTables automatically group and summarize data based on the criteria chosen by the user. For example, if you have a dataset with sales data by region, product, and date, you can use a PivotTable to quickly summarize total sales by region and product, or analyze sales trends over time.

Visualization: PivotTables can also be used to create visualizations such as charts and graphs to further explore and communicate insights from the data. These visualizations can help users identify patterns, trends, and outliers more easily.

2. Tutorial Week 2: Concepts

PivotTables are incredibly useful for summarizing large datasets because they allow users to:

- Quickly summarize and analyze large volumes of data without the need for complex formulas or manual calculations.
- Easily rearrange and explore different views of the data to gain insights from different perspectives.
- Create dynamic reports and dashboards that can be updated easily as new data becomes available.
- Preserve the integrity of the original dataset since PivotTables do not alter the underlying data—they simply provide a summary and analysis of it.
- Overall, PivotTables are a powerful tool for data analysis and reporting, enabling users to extract meaningful insights from large datasets in a flexible and efficient manner.

Setting Up a PivotTable

1. Open Excel Workbook: Start with the provided 'PivotTable.xlsx' file. Ensure you understand the layout and data.

2. Convert Data to Table:

- Select any cell within the data range and navigate to Insert > Table.
- Ensure the 'My table has headers' option is checked in the dialog box that appears, then click OK.

3. Inserting a PivotTable:

- Navigate to Insert > PivotTable.
- Choose the table or range as the data you just formatted as a table.
- Decide whether to place the PivotTable in a new worksheet or an existing one, then click OK.

Configuring the PivotTable Field List Setup:

1. Open your Excel Workbook.

Navigate to the worksheet containing your data or where you plan to insert the PivotTable.

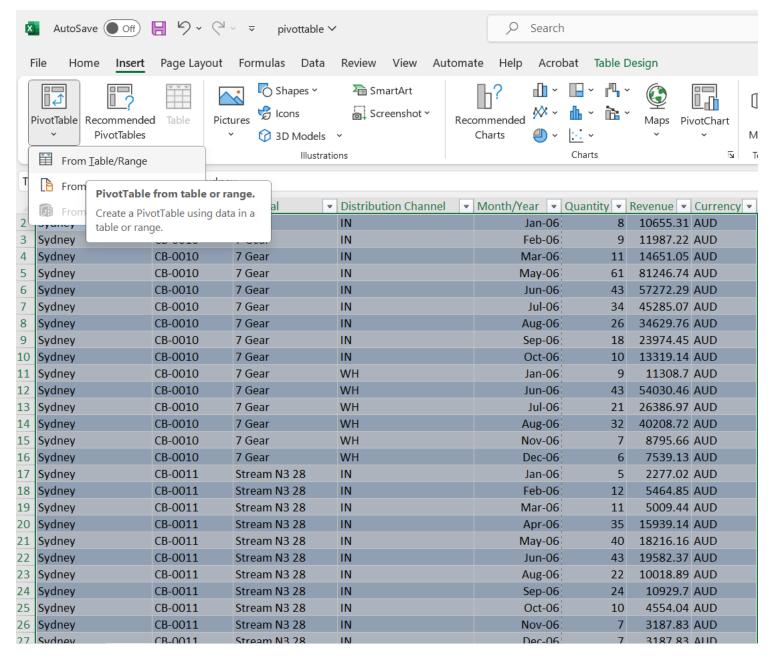
2. Insert a PivotTable:

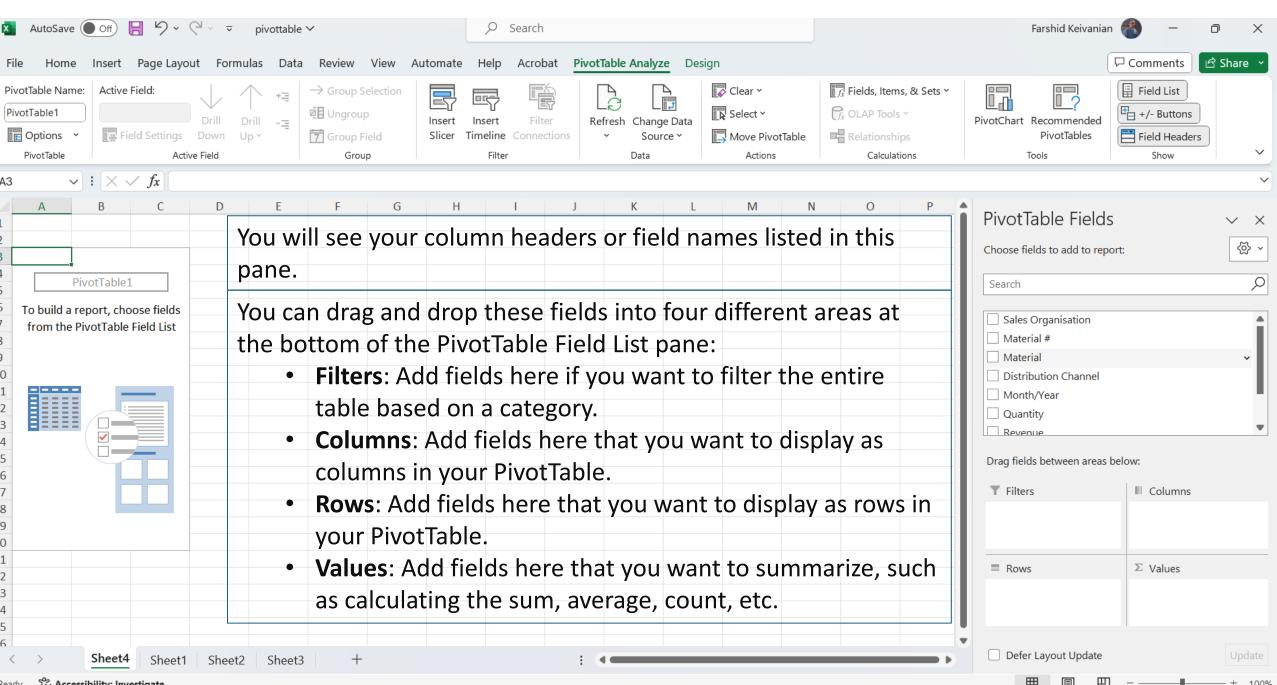
- Select your data range.
- Go to the Insert tab and click on PivotTable.
- Choose where you want the PivotTable to be placed (new worksheet or existing worksheet).

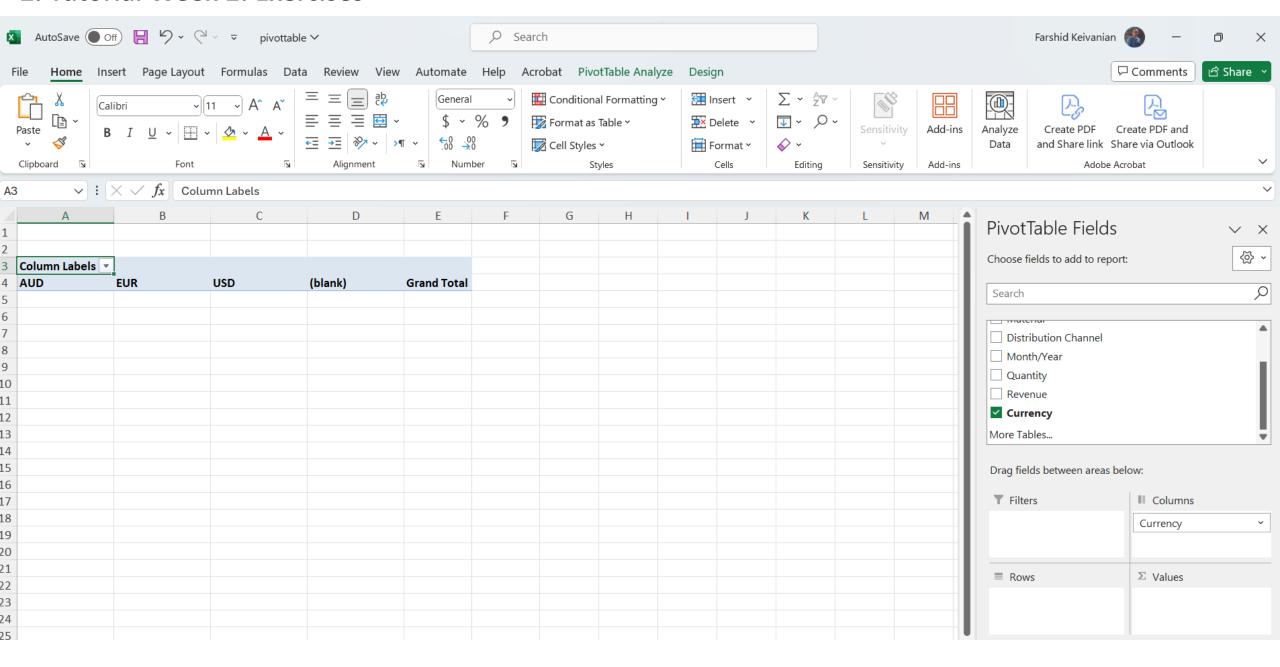
3. Setup the PivotTable Field List:

- Once the PivotTable is created, the PivotTable Field List pane will appear on the right side of your Excel window.
- You can drag and drop fields into four different areas: Filters, Columns, Rows, and Values.

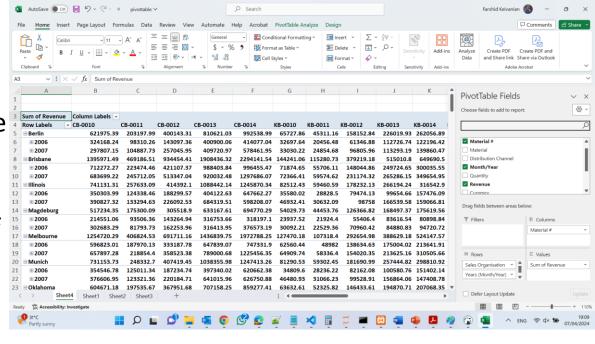
A	В	С	D	E	F	G	Н
Sales Organisation 💌	Material # ■	Material •	Distribution Channel 💌	Month/Year ▼	Quantity 💌	Revenue 💌	Currency •
Sydney	CB-0010	7 Gear	IN	Jan-06	8	10655.31	AUD
Sydney	CB-0010	7 Gear	IN	Feb-06	9	11987.22	AUD
Sydney	CB-0010	7 Gear	IN	Mar-06	11	14651.05	AUD
Sydney	CB-0010	7 Gear	IN	May-06	61	81246.74	AUD
Sydney	CB-0010	7 Gear	IN	Jun-06	43	57272.29	AUD
Sydney	CB-0010	7 Gear	IN	Jul-06	34	45285.07	AUD
Sydney	CB-0010	7 Gear	IN	Aug-06	26	34629.76	AUD
Sydney	CB-0010	7 Gear	IN	Sep-06	18	23974.45	AUD
Sydney	CB-0010	7 Gear	IN	Oct-06	10	13319.14	AUD
Sydney	CB-0010	7 Gear	WH	Jan-06	9	11308.7	AUD
Sydney	CB-0010	7 Gear	WH	Jun-06	43	54030.46	AUD
Sydney	CB-0010	7 Gear	WH	Jul-06	21	26386.97	AUD
Sydney	CB-0010	7 Gear	WH	Aug-06	32	40208.72	AUD
Sydney	CB-0010	7 Gear	WH	Nov-06	7	8795.66	AUD
Sydney	CB-0010	7 Gear	WH	Dec-06	6	7539.13	AUD
Sydney	CB-0011	Stream N3 28	IN	Jan-06	5	2277.02	AUD
Sydney	CB-0011	Stream N3 28	IN	Feb-06	12	5464.85	AUD
Sydney	CB-0011	Stream N3 28	IN	Mar-06	11	5009.44	AUD
Sydney	CB-0011	Stream N3 28	IN	Apr-06	35	15939.14	AUD
Sydney	CB-0011	Stream N3 28	IN	May-06	40	18216.16	AUD
Sydney	CB-0011	Stream N3 28	IN	Jun-06	43	19582.37	AUD
Sydney	CB-0011	Stream N3 28	IN	Aug-06	22	10018.89	AUD
Sydney	CB-0011	Stream N3 28	IN	Sep-06	24	10929.7	AUD
Sydney	CB-0011	Stream N3 28	IN	Oct-06	10	4554.04	AUD

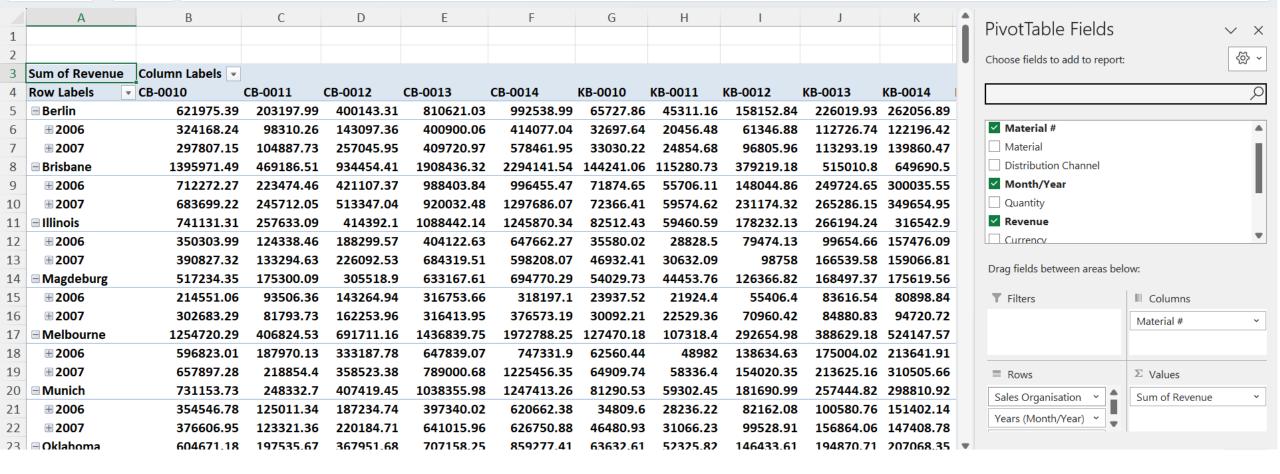




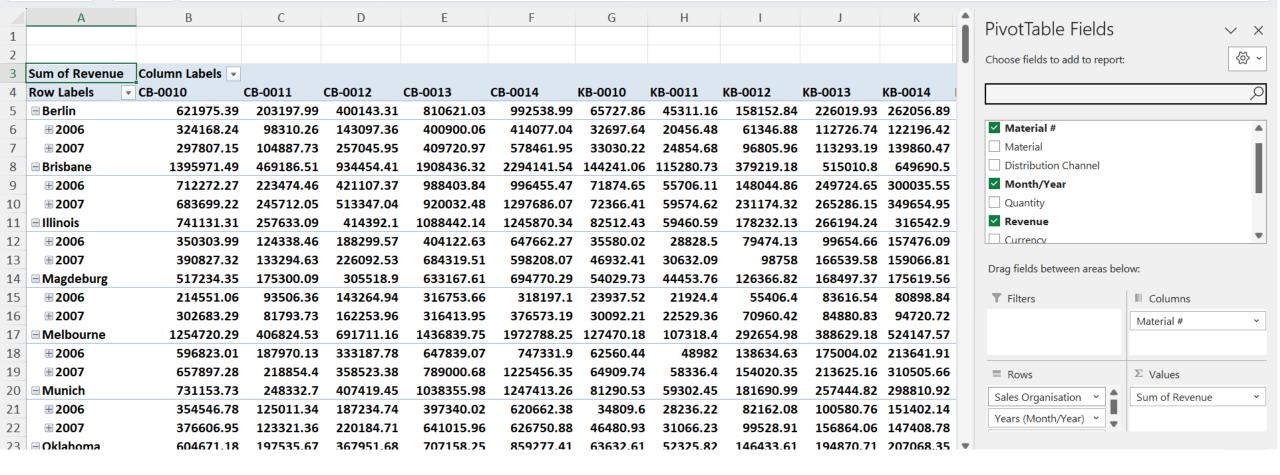


- For example, if you want to analyze revenue by sales organization and material number, you would drag the "Sales Organisation" field to Rows, the "Material #" field to Columns, and the "Revenue" field to Values. If you also want to analyze by month, you would drag "Month/Year" to either Rows or Columns, depending on how you want to view the data.
- The fields you choose for Rows and Columns will
 define the structure of your PivotTable, and the fields
 in the Values area will be calculated for each row and
 column intersection. The Filters area allows you to
 limit what data is shown in the PivotTable based on
 the filter fields.

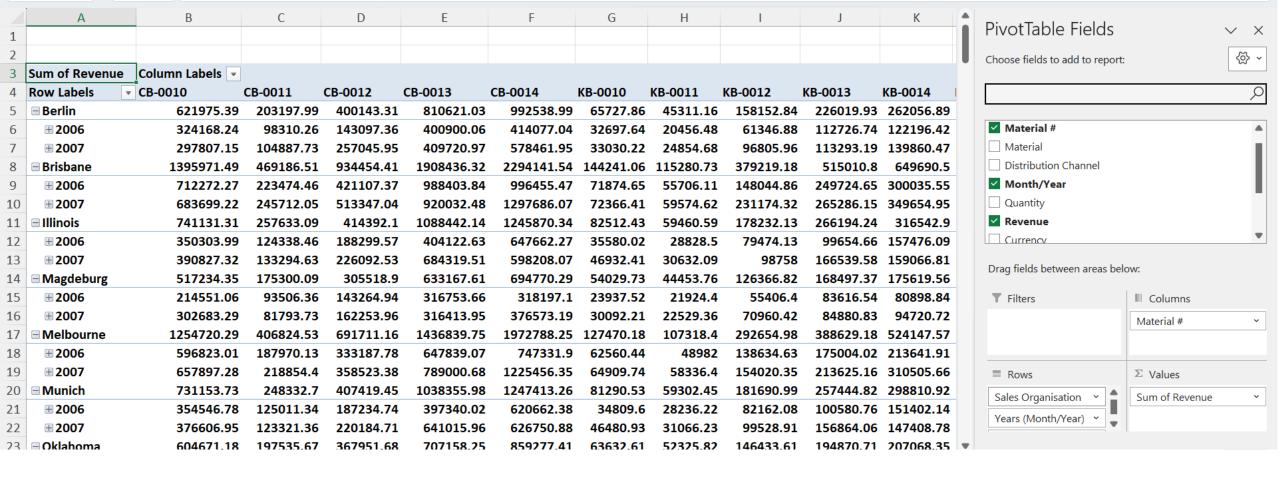




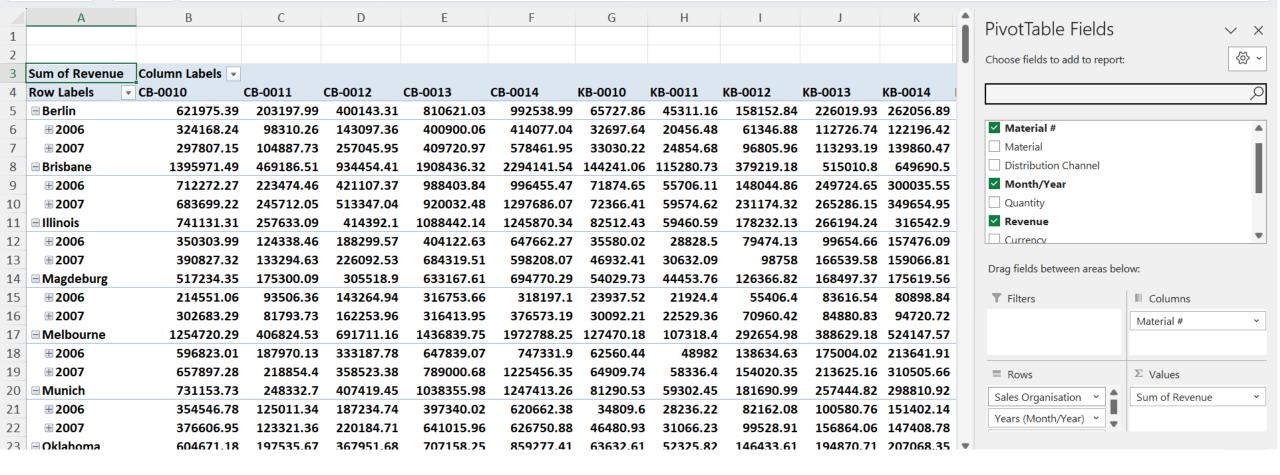
Sales Organisation and Material Numbers: The PivotTable is structured with 'Sales Organisation' in the rows and 'Material #' in the columns. This allows you to see the revenue generated by each material number for each sales organization.



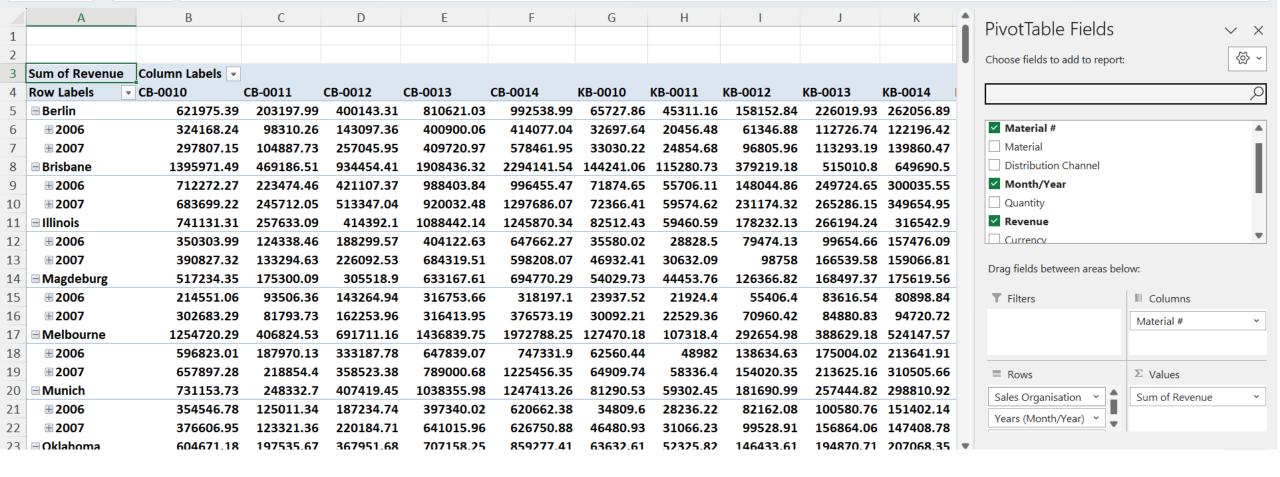
Revenue Data: The values in the PivotTable represent the sum of revenue for the intersection of each sales organization and material number. These are provided for two years as seen in the row labels (2006 and 2007).



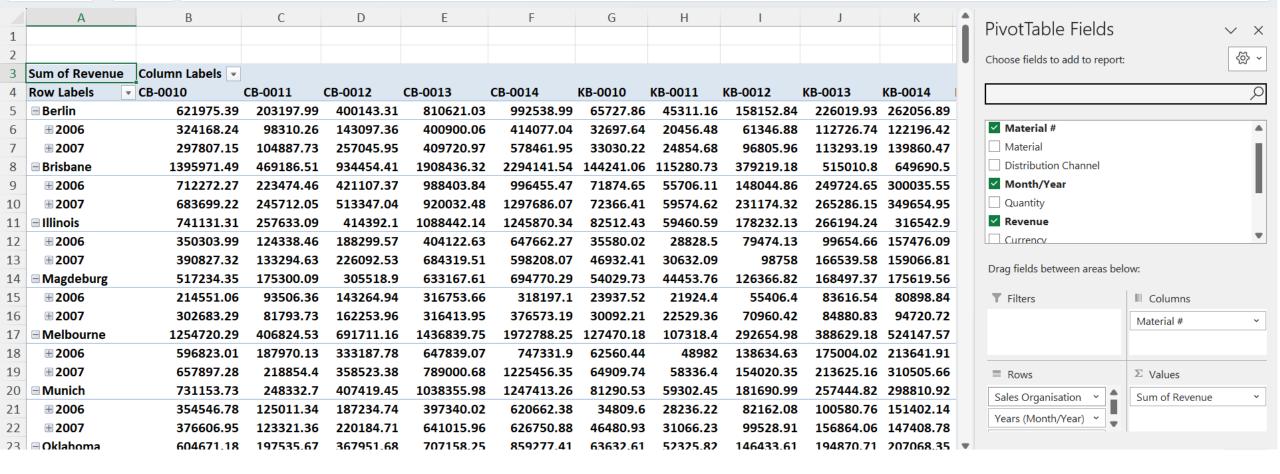
Yearly and Total Revenue: For each sales organization, there are subtotals for each year (2006 and 2007), providing an insight into the annual revenue changes for each material. At the end of each sales organization's section, there is a total revenue figure, which gives the combined revenue for all materials for that particular sales organization across both years.



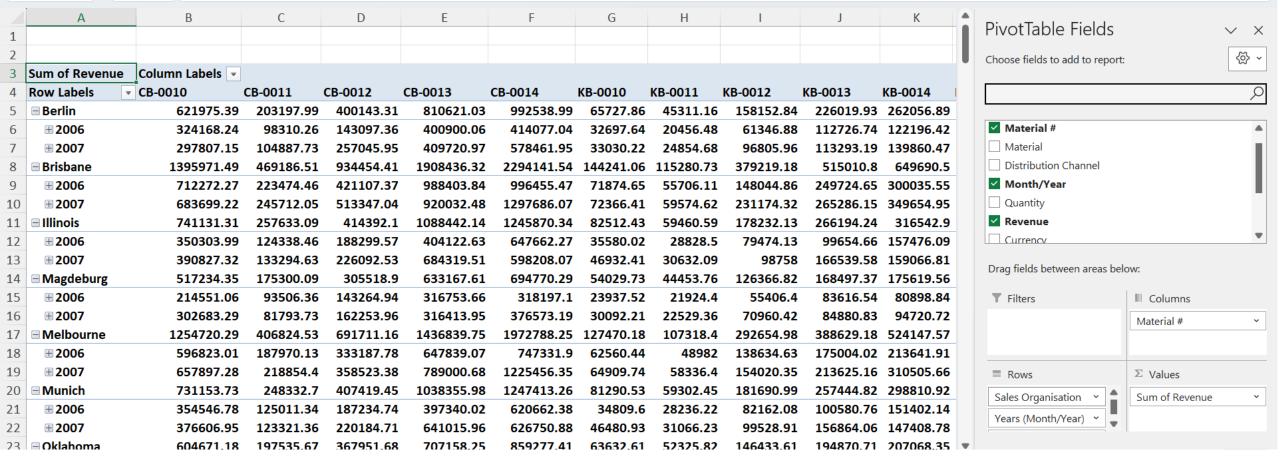
Material Performance: We can compare how different materials performed within a single sales organization as well as across different sales organizations. For instance, we can identify which material numbers are bestsellers and which are not performing as well.



Comparing Sales Organizations: It's possible to compare the performance of sales organizations against each other. This can highlight which locations are generating the most revenue and which may need attention or strategy changes.



Trends Over Time: By including both 2006 and 2007, you can identify trends over time. For example, whether revenue is increasing or decreasing for specific materials or within certain sales organizations.

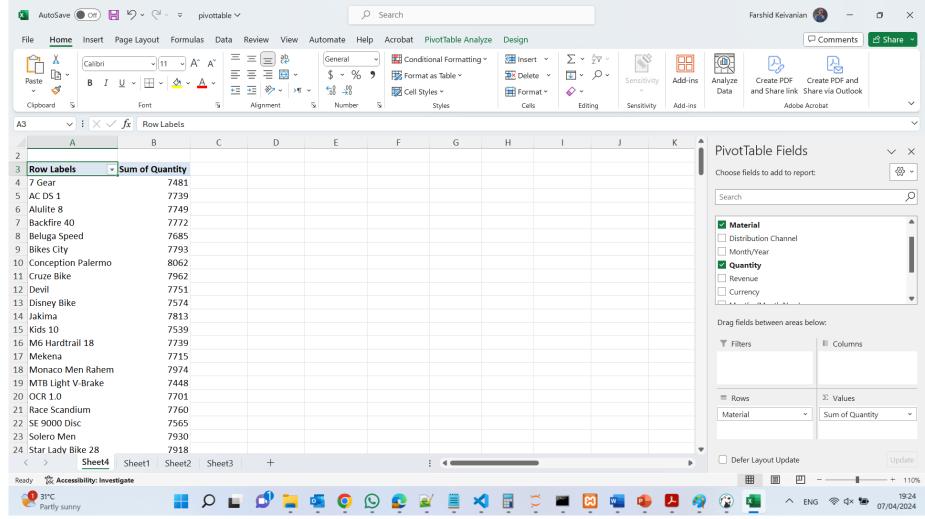


- From the PivotTable, if we see a significant increase or decrease in revenue from 2006 to 2007 for a specific material or sales organization, this could warrant further investigation to understand the underlying causes.
- Lastly, the overall layout of the PivotTable allows for a comprehensive overview, making it easier for stakeholders to make informed decisions based on the presented data.

Configuring the PivotTable Field List Setup:

4. Example Configuration:

To find out which
material sold the most,
drag the Material field to
the Rows area.



 Drag the Quantity field to the Values area and ensure it is set to sum (it usually defaults to this, but if not, click on the small drop-down arrow next to Quantity in the Values area and select Summarize
 Values By > Sum). Try and answer the following questions from the data.

Which Material sold the most in terms of Quantity?

Sorting and Filtering:

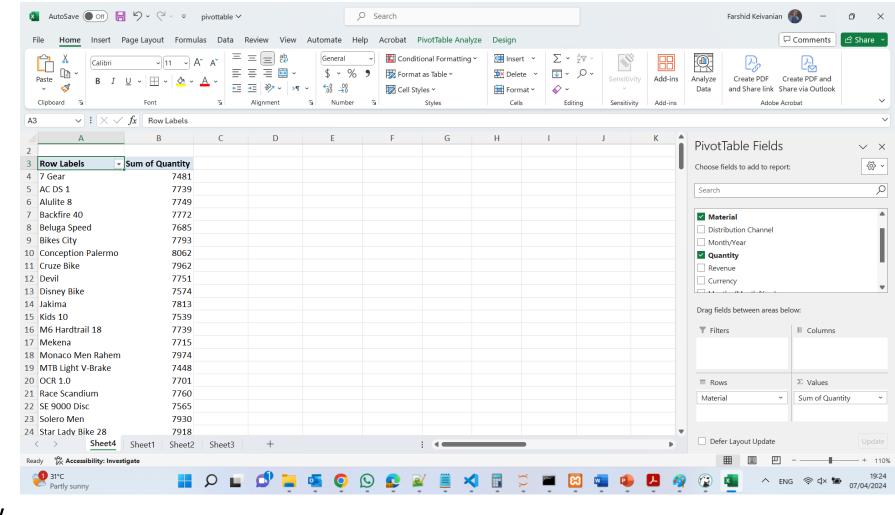
- Applying Filters:
- While the PivotTable cell is selected, go to the **Data** tab on the Excel ribbon.
- Look for the Sort & Filter group in the ribbon.
- Click on Sort Largest to

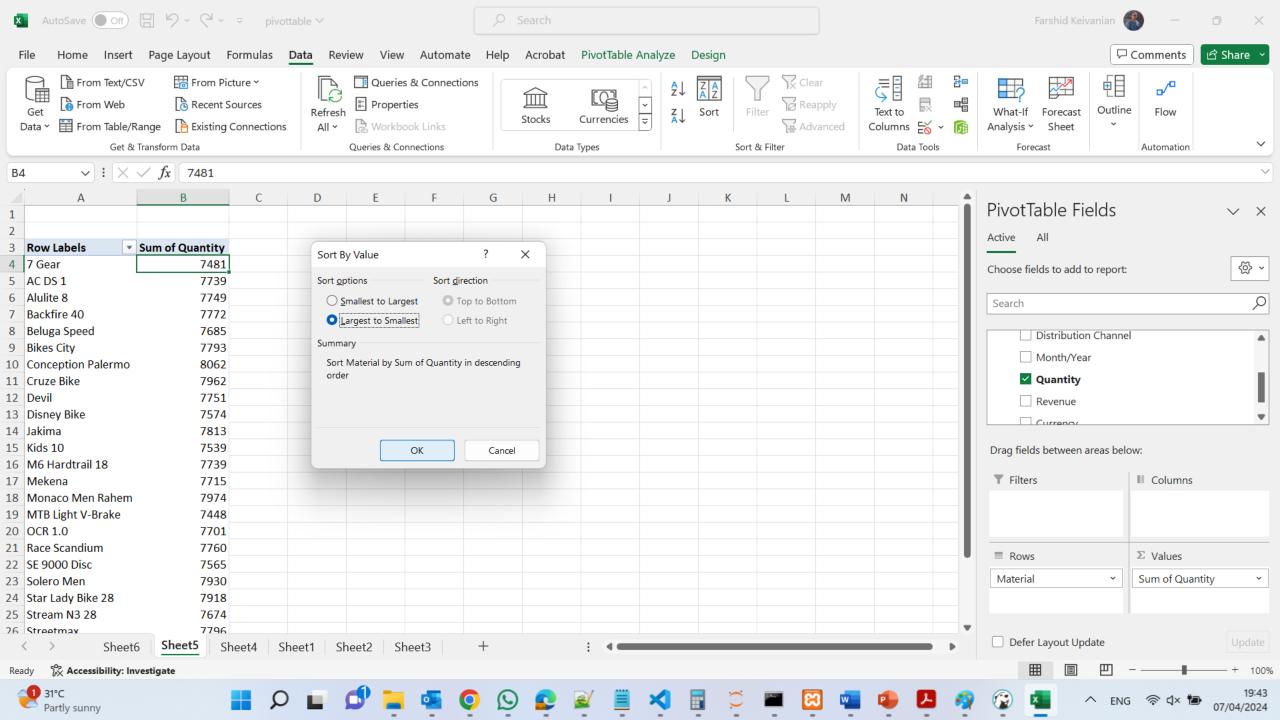
 Smallest. This will reorder

 your PivotTable data to show

 the items with the highest

 quantities at the top.

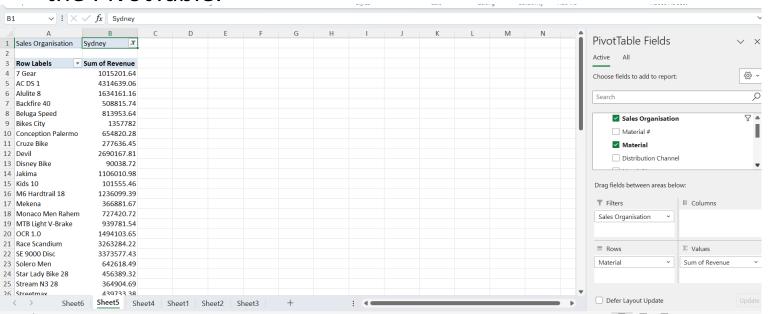


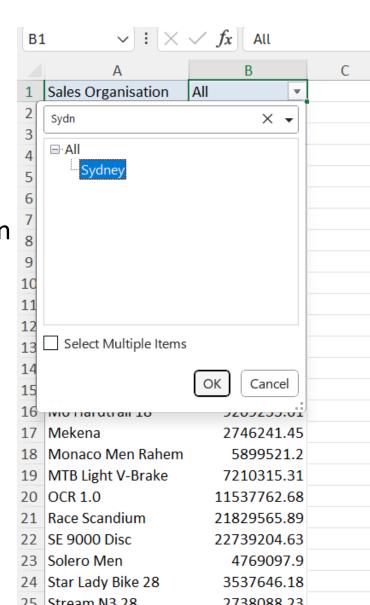


a)	Which material provided the most revenue in Sydney?
b)	What is the total sales revenue for Germany?
c)	What is the total wholesale quantity?
d)	What percentage of the total sales quantity for Germany is the Jakima material? (hint: use context menu for Values in the PivotTable Field List)
e)	What is the biggest selling product in terms of quantity in April 2007?
f)	Which material had the biggest in increase in quantity sold from April 2007 to May 2007? (Hint: use context menu for Values in the PivotTable Field List – Show Value As)

a) Which material provided the most revenue in Sydney?

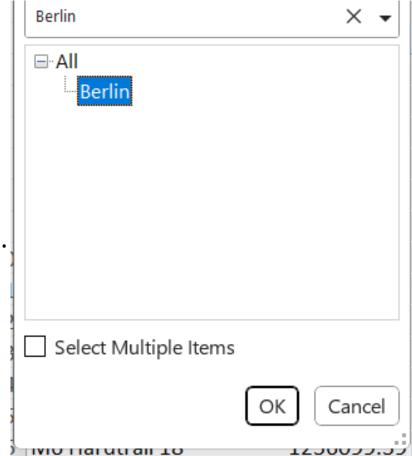
- Add "Material" to the Rows area of the PivotTable.
- Add "Revenue" to the Values area and set it to sum the revenue.
- Add "Sales Organisation" or the field that represents locations to the Filters area and filter for "Sydney."
- After setting up, look for the highest revenue number beside a material in the PivotTable.





b) What is the total sales revenue for Germany?

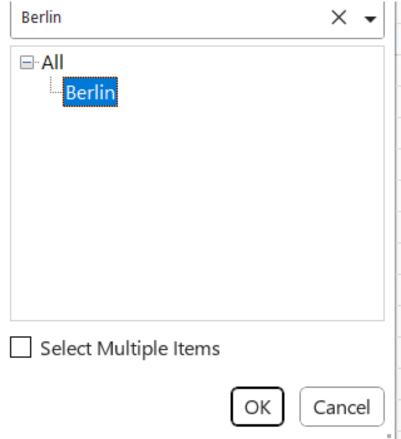
- Remove all filters except for the one that represents locations.
- Filter the location to "Germany."
- Make sure "Revenue" is in the Values area set to sum up the revenue.



b) What is the total sales revenue for Germany?

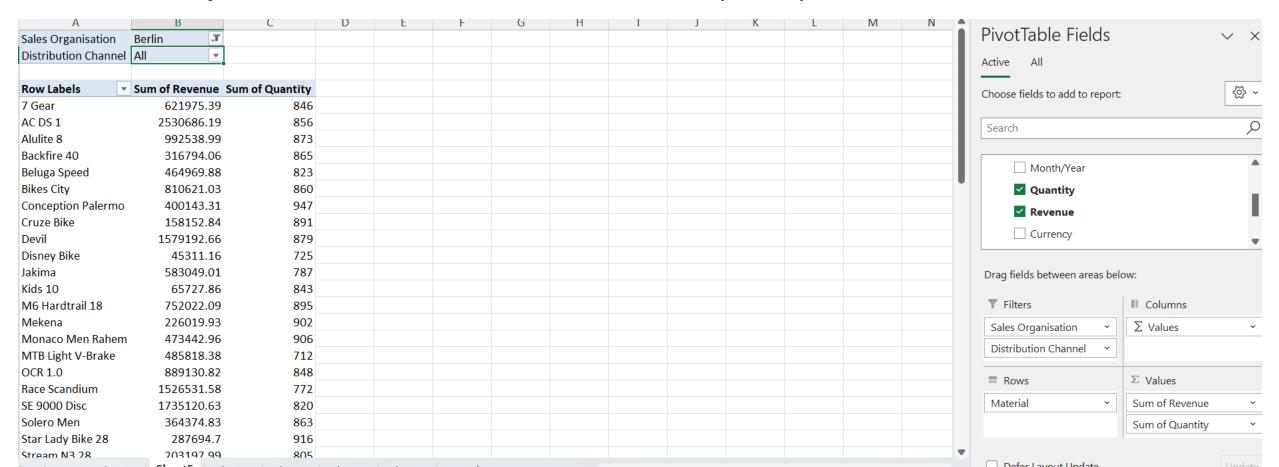
- Remove all filters except for the one that represents locations.
- Filter the location to "Germany."
- Make sure "Revenue" is in the Values area set to sum up the revenue.





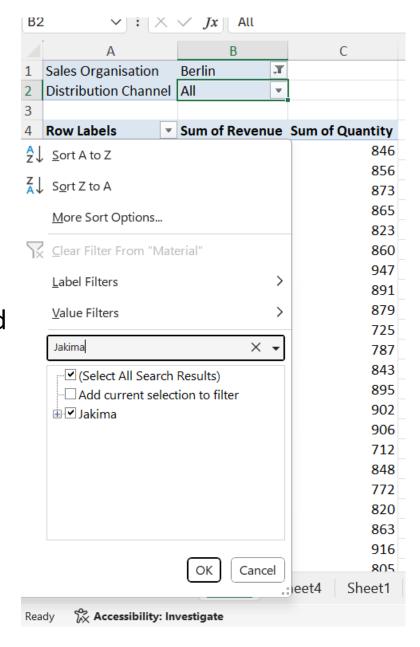
c) What is the total wholesale quantity?

- Remove the location filter.
- Add "Distribution Channel" to the Filters area and select "All."
- Add "Quantity" to the Values area and set it to sum the quantity.



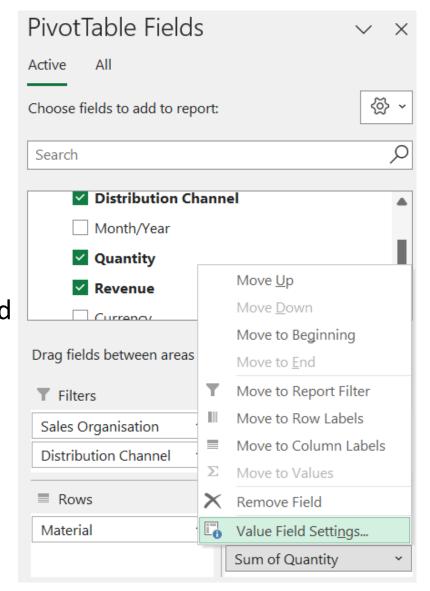
d) What percentage of the total sales quantity for Germany is the Jakima material?

- Filter the location to "Germany."
- Filter the Material to "Jakima."
- In the Values area, click on the "Quantity" field, then select "Show Value As" from the context menu, and choose "Percentage of Grand Total."



d) What percentage of the total sales quantity for Germany is the Jakima material?

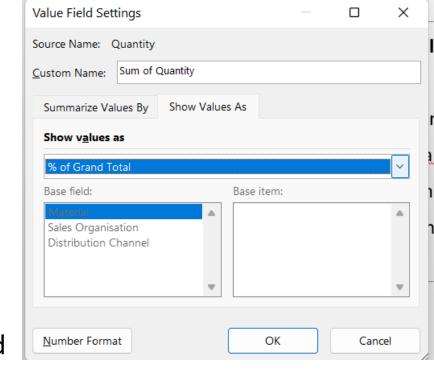
- Filter the location to "Germany."
- Filter the Material to "Jakima."
- In the Values area, click on the "Quantity" field, then select "Show Value As" from the context menu, and choose "Percentage of Grand Total."



d) What percentage of the total sales quantity for Germany is the

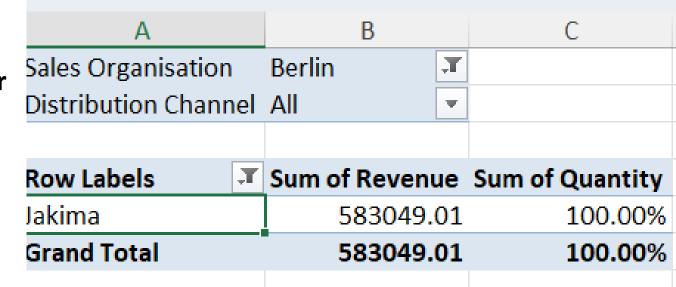
Jakima material?

- Filter the location to "Germany."
- Filter the Material to "Jakima."
- In the Values area, click on the "Quantity" field, then select "Show
 Value As" from the context menu, and choose "Percentage of Grand
 Total."

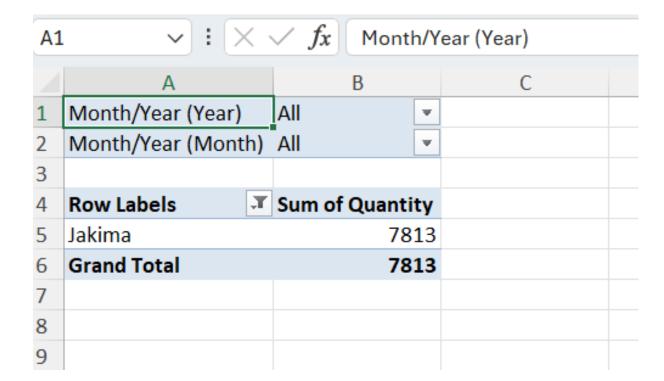


d) What percentage of the total sales quantity for Germany is the Jakima material?

- Filter the location to "Germany."
- Filter the Material to "Jakima."
- In the Values area, click on the "Quantity" field, then select "Show Value As" from the context menu, and choose "Percentage of Grand Total."



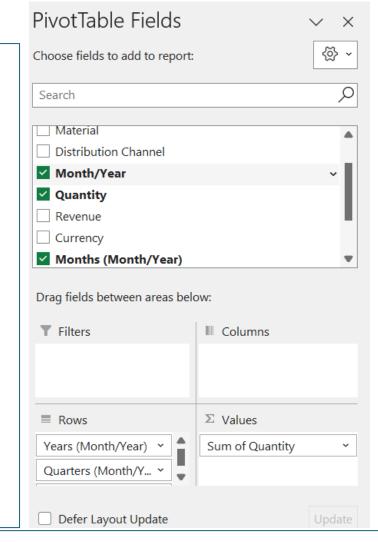
- e) What is the biggest selling product in terms of quantity in April 2007?
- Set up the PivotTable:
- Drag the date field to the "Filters" area of the PivotTable.
- Drag the material (or product) field to the "Rows" area.
- Drag the quantity field to the "Values" area.
 Ensure that it is set to sum the quantities (it should say "Sum of Quantity").



e) What is the biggest selling product in terms of quantity in April 2007?

Filter by Date:

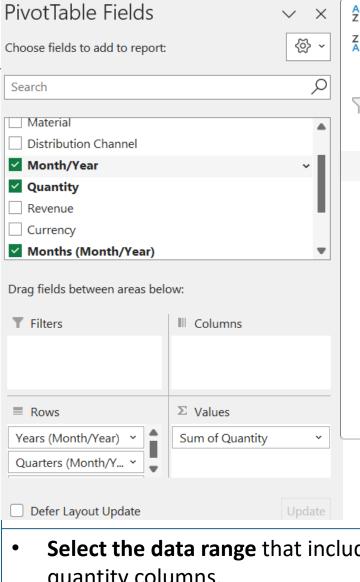
- Click on the drop-down arrow in the Date filter at the top of the PivotTable.
- Choose "Date Filters," then "Between."
- Enter the start date as 04/01/2007 and the end date as 04/30/2007 to cover all of April 2007.
- Click "OK" to apply the filter.



- Select the data range that includes the date, material (product), and quantity columns.
- Go to the "Insert" tab on the Ribbon and click on "PivotTable."
- In the Create **PivotTable dialog box**, choose where you want the PivotTable report to be placed (new worksheet or existing worksheet).
- Click "OK."

e) What is the biggest selling product in terms of quantity in April 2007? Filter by Date:

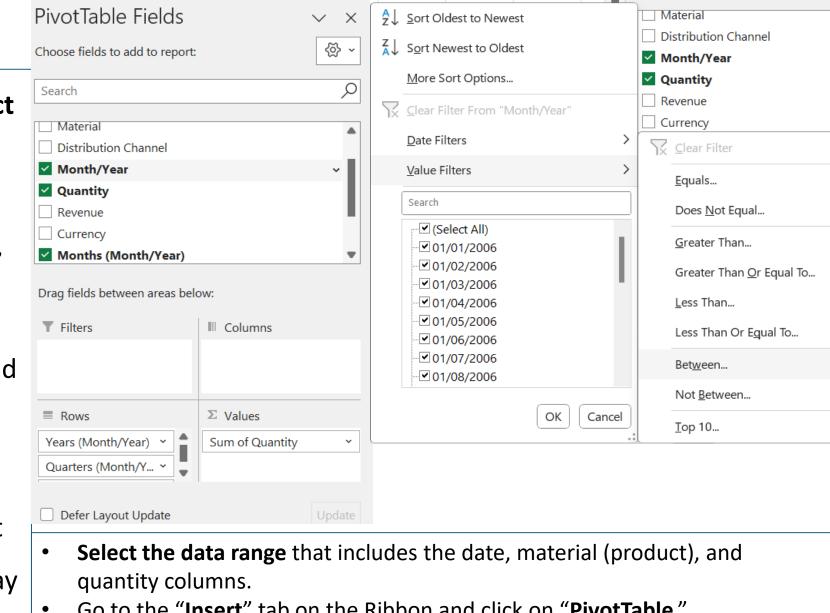
- Click on the drop-down arrow in the Date filter at the top of the PivotTable.
- Choose "Date Filters," then"Between."
- Enter the start date as 04/01/2007 and the end date as 04/30/2007 to cover all of April 2007.
- Click "OK" to apply the filter.



- Sort Oldest to Newest Material Distribution Channel Sort Newest to Oldest ✓ Month/Year More Sort Options... Quantity Revenue Clear Filter From "Month/Year" Currency Date Filters Clear Filter Value Filters Equals... Search Does Not Equal... ✓ (Select All) Greater Than... **☑** 01/01/2006 **☑** 01/02/2006 Greater Than Or Equal To ... **☑** 01/03/2006 **☑** 01/04/2006 Less Than... ✓ 01/05/2006 Less Than Or Equal To ... 01/06/2006 • 01/07/2006 Between... ✓ 01/08/2006 Not Between... OK Cancel Top 10...
- Select the data range that includes the date, material (product), and quantity columns.
- Go to the "Insert" tab on the Ribbon and click on "PivotTable."
- In the Create PivotTable dialog box, choose where you want the PivotTable report to be placed (new worksheet or existing worksheet).
- Click "OK."

e) What is the biggest selling product in terms of quantity in April 2007? Filter by Date – Set up PivotTable:

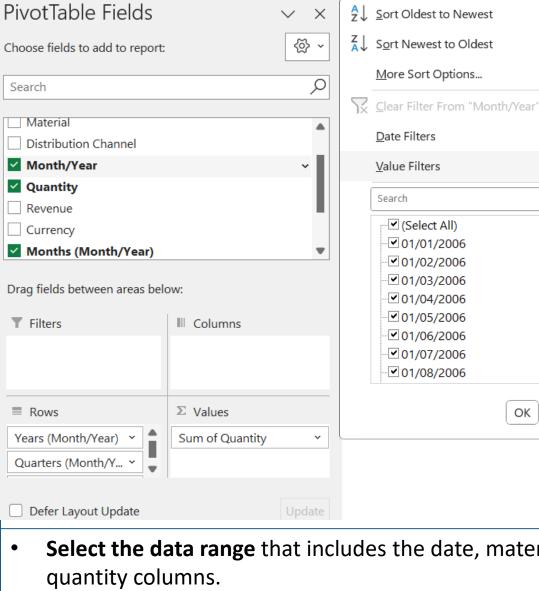
- Drag the date field to the "Filters" area of the PivotTable.
- Drag the material (or product) field to the "Rows" area.
- Drag the quantity field to the "Values" area. Ensure that it is set to sum the quantities (it should say "Sum of Quantity").



- Go to the "Insert" tab on the Ribbon and click on "PivotTable."
- In the Create **PivotTable dialog box**, choose where you want the PivotTable report to be placed (new worksheet or existing worksheet).
- Click "OK."

e) What is the biggest selling product in terms of quantity in April 2007? **Filter by Date:**

- Click on the drop-down arrow in the Date filter at the top of the PivotTable.
- Choose "Date Filters," then "Between."
- Enter the start date as 04/01/2007 and the end date as 04/30/2007 to cover all of April 2007.
- Click "OK" to apply the filter.



01/06/2006 • 01/07/2006 Between... ✓ 01/08/2006 Not Between... OK Cancel Top 10... **Select the data range** that includes the date, material (product), and

Material

✓ Month/Year

Revenue

Currency

Clear Filter

Equals...

Does Not Equal...

Greater Than Or Equal To ...

Less Than Or Equal To ...

Greater Than...

Less Than...

Quantity

Distribution Channel

- Go to the "Insert" tab on the Ribbon and click on "PivotTable."
- In the Create **PivotTable dialog box**, choose where you want the PivotTable

More Sort Options...

Date Filters

Value Filters

✓ (Select All)

☑ 01/01/2006

☑ 01/02/2006

☑ 01/03/2006

☑ 01/04/2006

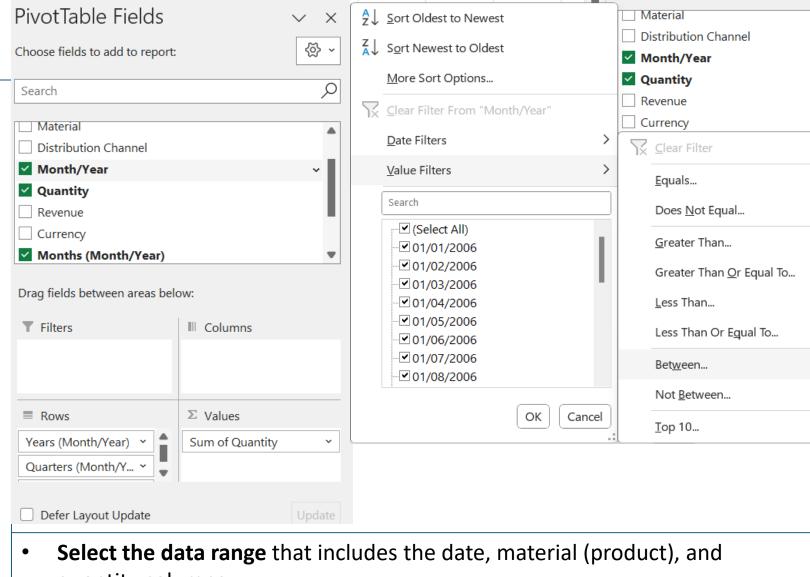
✓ 01/05/2006

Search

report to be placed (new worksheet or existing worksheet). Click "OK."

e) What is the biggest selling product in terms of quantity in April 2007? **Identify the Biggest Selling Product:**

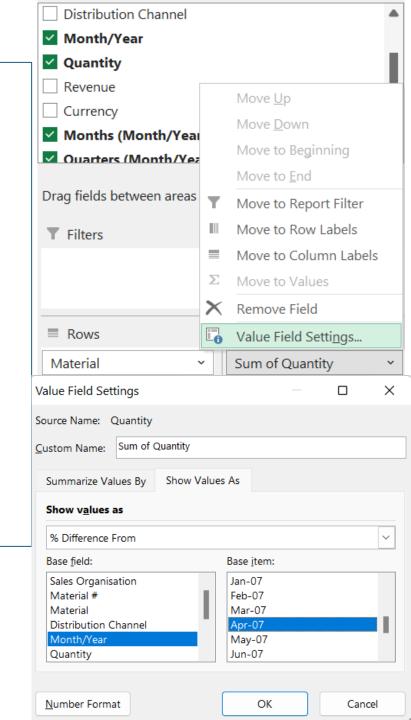
- Look at the PivotTable's "Row Labels" for material/product and corresponding "Sum of Quantity".
- The material/product with the highest "Sum of Quantity" is your biggest selling product for April 2007.



- quantity columns.
- Go to the "Insert" tab on the Ribbon and click on "PivotTable."
- In the Create **PivotTable dialog box**, choose where you want the PivotTable report to be placed (new worksheet or existing worksheet).
 - Click "OK."

f) Which material had the biggest increase in quantity sold from April 2007 to May 2007?

- We will need to add "Month/Year" to the Columns or Rows area and
 "Material" to the other.
- Add "Quantity" to the Values area.
- Use the "Show Values As" option to calculate the difference from the previous month. This is often found under "Value Field Settings" > "Show Value As" > "Difference From" and then select "Month/Year" and "April 2007" as the base item.



3. Key assessment dates



Key Assessment I

Dates	\odot

ASSESSMENT	DUE DATE	DUE TIME	LENGTH
Online Quizzes x 4	Refer assessment folder	9.00 pm	15 minutes once test is accessed
Group Case Study	2 June, 2024	11.59 pm	Refer to assignment instructions

ASSESSMENT	DATE	START TIME	DURATION
Final Assessment	TBC	TBC	TBC

Please refer to the assessment folders below for full details regarding submission requirements and times



Online Quizzes Information

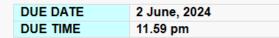


ASSESSMENT	QUIZ DATE	QUIZ AVAILABLE
Quiz 1	14 April, 2024	6.00 am - 9.00 pm
Quiz 2	28 April, 2024	6.00 am - 9.00 pm
Quiz 3	12 May, 2024	6.00 am - 9.00 pm
Quiz 4	26 May, 2024	6.00 am - 9.00 pm

3. Key assessment dates



Group Case Study Information



This folder contains information about the Group Case Study that forms part of the assessment for this unit.

Information includes instructions to join a group, detailed assignment requirements and submission link.



Final Assessment Information

Availability: Item is hidden from students.

This folder contains information about the Final Assessment and includes detailed assessment specifications, submission requirements and submission link.

Please note that the assessment and submission link is only available during the period listed above.

The submission link will not be available once the time expires therefore it is strongly recommended you allow yourself sufficient time to complete the assessment prior to the link closing.

If you do not have internet access or if your connection is poor, it is your responsibility to seek out another source such as a public library, internet café, etc., to submit your assessment within the required time.

No late submissions are allowed.

4. Attendance & Tutorial Questions (Excel: Office.com) - Recognising student participation and engagement specifically identifying those who are most actively involved!

Q1) What is the primary function of a PivotTable in Excel?

- A) To alter and manipulate the original dataset.
- B) To summarize and analyze large datasets without changing the original data.
- C) To convert text data into tables.
- D) To create complex formulas for data analysis.

Q2) In the context of PivotTables, what does the term 'slice and dice' refer to?

- A) Removing all data from a report.
- B) Aggregating all data into a single summary.
- C) Viewing the data from different dimensions or perspectives.
- D) Navigating from detailed to summarized views of data.

- 4. Attendance & Tutorial Questions (Excel: Office.com) Recognising student participation and engagement specifically identifying those who are most actively involved!
- Q3) When setting up a PivotTable to analyze the quantity sold by month/year, where should the "Month/Year" and "Quantity" fields be placed?
- A) "Month/Year" in Values and "Quantity" in Rows.
- B) Both "Month/Year" and "Quantity" in Filters.
- C) "Month/Year" in Columns or Rows and "Quantity" in Values.
- D) "Month/Year" in Filters and "Quantity" in Columns.

