

Objectives

In this lab, you will create charts to visualise data in Microsoft Excel.

Part 1: Creating a Line Chart

Part 2: Creating a Column Chart

Part 3: Creating a Pie Chart

Background / Scenario

Data visualisation assists with the analysis and interpretation of data by graphically presenting relationships, trends, and inferences that cannot always be clearly derived by examining the raw text and numeric values in a dataset.

This lab uses sample datasets to demonstrate three visualisations of that data.

Required Resources

- Mobile device or PC/laptop with a browser, Microsoft 365 Excel online, and internet access

Note: The precise steps to format and manipulate data in Excel can vary between platforms and versions. The instructions in this lab are based on the free version of Excel available from Office.com and may have to be modified to match the user's platform, software, or version to achieve the results shown in this lab.

Part 1: Creating a Line Chart

This chart will display the Profit and Revenue for the years 2017, 2018, 2019, 2020 and 2021.

Step 1: Download the data file

- a. Download the sample file **Bike Sales_Visualisations_Lab.xlsx** to your OneDrive. Open the downloaded file in MS 365 Excel.

This workbook contains four worksheets that each will be used separately throughout this lab.

Step 2: Insert the line chart.

- a. Select the **Revenue and Profit by Year** worksheet. The worksheet contains the profit and the revenue totals for each of the years 2017, 2018, 2019, 2020, and 2021.
- b. Select the data in the cells **A3** through to **C8**.

- c. From the **Insert** menu, expand the ribbon using the down arrow on the right side of the ribbon, click the **Line** chart tool, then select Line with Markers (bottom left option)

This creates a line chart with an x-axis showing the years, and a y-axis dollar amounts.

Step 3: Format the chart.

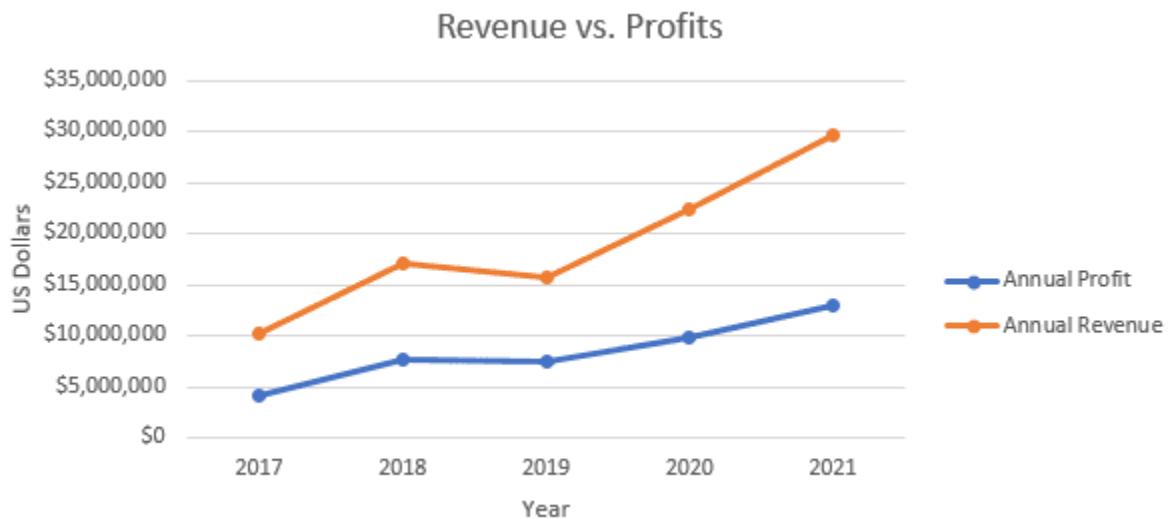
- a. To improve the clarity of the chart, change the vertical axis to display USD currency.
 1. Right click on the chart and select **Format**. The **Chart Format** window pane opens on the right of the worksheet.
 2. Expand the options for the **Vertical Axis**.
 3. In the **Number Format** section change **Category to Currency** and change **Decimal places** to 0.
- b. Add a chart title
 1. In the Chart Format window pane, change the **Chart Title** option switch to the on position if it is not already and expand the **Chart Title** options.
 2. Change the **Chart Title** to “Revenue vs. Profits”.
 3. Keep the **Title Position** at the default which is **Above**.
- c. Change the Legend names to “Annual Profit” and “Annual Revenue”.
 1. Select cell B3 and change the column name to Annual Profit.
 2. Select cell C3 and change the column name to Annual Revenue.

The legend names at the bottom of the chart should change to match the column names.

- d. Reposition the Legend to the right of the chart.
 1. Right click on the chart to bring up the Chart Format window pane.
 2. Expand the options for **Legend**.
 3. Change the **Position** option to **Right**.
- e. Add axis titles for both the vertical and horizontal axis..
 1. If necessary, right click on the chart to bring up the Chart Format window pane.
 2. Expand the Horizontal Axis options.

3. Scroll down to the Axis Title and move the switch to the on position.
4. Add an axis title of “**Year**”.
5. Expand the options for the **Vertical Axis**.
6. Scroll down to the **Axis Title** and move the switch to the on position.
7. Add an axis title of “**US Dollars**”.

The finished chart should appear as shown below.



Part 2: Creating a Column Chart

Step 1: Insert the Column Chart

- a. Select the **Product Revenue by Country** worksheet. The worksheet contains the revenue totals for each product category by country.
- b. Select the data in the cells **A3** through to **E10**.
- c. From the **Insert** menu, click the **Column** chart tool, then select the **Stacked Column** (middle option)

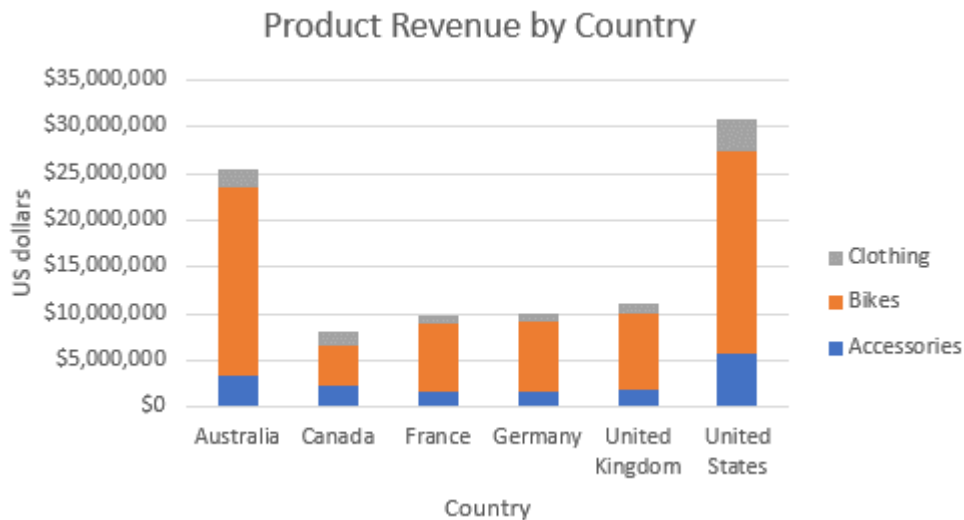
This creates a column chart with an x-axis showing the country, and a y-axis showing dollar amounts.

Step 2: Format the chart.

- a. Using the same methods used for the line chart in Part 1 perform the following formatting changes to the chart.
 1. Give the chart a title of “Product Revenue by Country”.
 2. Change the vertical axis **Number Format** to **Currency** and the **Decimal Places** to zero

3. Change the **Position** of the **Legend** to the **Right**.
4. Add a horizontal **Axis Title** of “Country”.
5. Add a vertical **Axis Title** of “US dollars”

Once completed the chart should appear as shown below.



Part 3: Creating a Pie Chart

Step 1: Insert the Pie Chart

- a. Select the **Revenue by Age Group** worksheet. The worksheet contains the revenue totals for each product category.
- b. Select the data in the cells **A3** through to **B7**.
- c. From the **Insert** menu, click the **Pie** chart tool, then select the **2D- Pie** (top option)

This creates a pie chart with each age group represented by an area on the cart representative of the revenue for that group.

Step 2: Format the chart.

- a. Using the same methods used previously for the line and column carts make the following format changes:
 1. Give the chart a title of “Revenue Comparison by Age Group”.
 2. Change the **Position** of the **Legend** to the **Right**.
- b. Add data labels to the chart area.
 1. In the **Chart Format** window expand the options for Series “Total:

2. Expand the options for **Data Labels**.
3. Check the boxes for **Category Name** and **Percentage**.

Once completed the chart should appear as shown below.

Revenue Comparison by Age Group

