


## Project Report

<b>Qualification Name</b>	Higher Diploma in Software Engineering
<b>Module Name</b>	Data Analytics & Management

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<b>Project title</b>	
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Learner declaration	
<p>I certify that the work submitted for this assignment is my own and research sources are fully acknowledged.</p> <p></p> <p>Student signature: <span style="float: right;">Date: 1/9/25</span></p>	

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Document Version History

Version Number	Effective Date of release	Details	Author
1.0	5 August 2025	Initial Creation	Mahathir Humaidi
2.0	1 September 2025	SA Report	Piyush Pachare

## 1. Project Background

This project aims to develop a comprehensive sales analytics dashboard using Microsoft Power BI, focusing on data-driven decision-making for management and performance improvement. The project involves importing and integrating multiple datasets—customers, products, and orders—into a unified model. By analyzing real sales data, the dashboard enables visualization of key metrics such as total revenue, product category performance, sales quantity, and geographic sales distribution.

Through interactive reports and drill-down features, users can explore detailed sales trends and discover actionable insights. The ability to filter by city or product hierarchy helps businesses better understand customer behavior and product success. This project highlights the power of modern BI tools in transforming raw sales data into meaningful visualizations, supporting strategic planning and operational excellence in sales functions.

## 2. Project Objective

1. Build an integrated data model combining customer, product, and order datasets for comprehensive sales analysis.
2. Create interactive Power BI visualizations that clearly present sales performance by product category, quantity, and geography.
3. Develop drill-down and filtering capabilities to enable detailed exploration and insight generation from sales data.
4. Enhance decision-making abilities for management by providing timely and accurate sales analytics through an easy-to-use dashboard.
5. Document and report the entire analytics process including data import, modeling, visualization, and interpretation to demonstrate understanding and execution.

### 3. Project Specifications

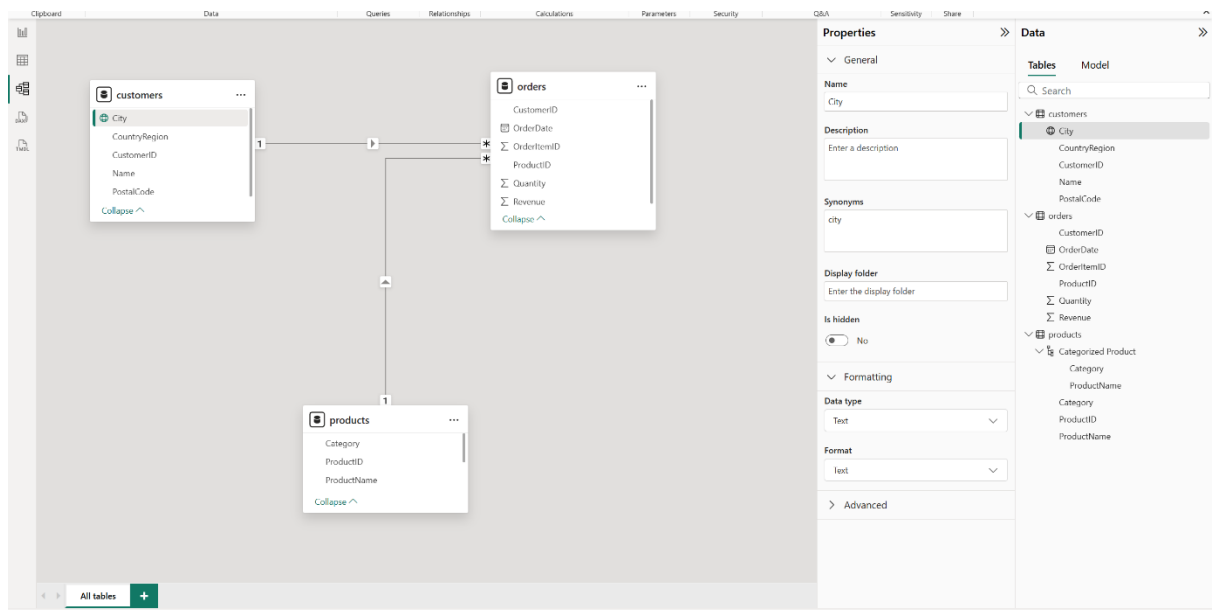
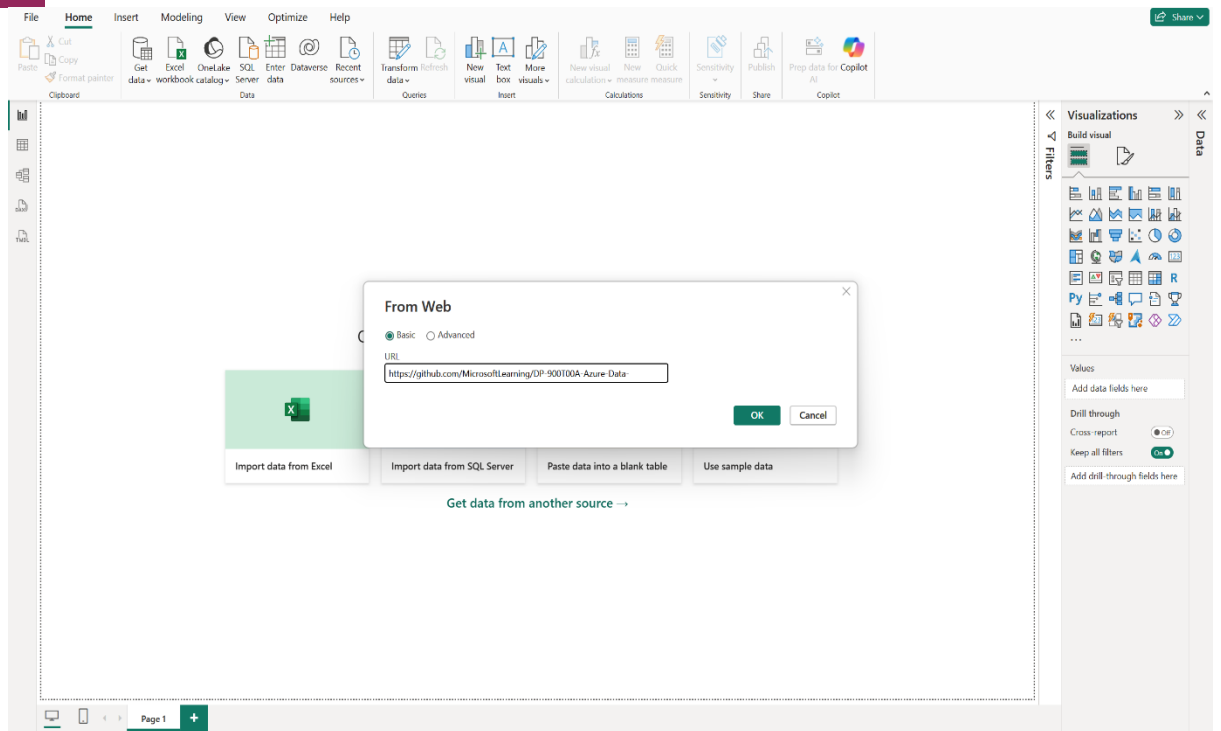
- Software Tools:
  - Microsoft Power BI Desktop for data import, modeling, and dashboard creation.
  - Power BI Service or PL-300 virtual lab environment for additional access or if desktop is unavailable.
- Data Sources:
  - Customer, Product, and Order data files imported from web URLs in CSV format.
  - Data includes information on customer locations, product categories, order quantities, and revenue figures.
- Technical Approach:
  - Import data sets using Power BI's "Get Data from Web" feature.
  - Build relationships between data tables in the model view.
  - Format data fields for usability (setting currency, creating hierarchies, categorizing locations).
  - Design and format report visuals with interactivity such as drills and filters.
  - Save project files for submission and provide evidence with screenshots.

#### 4. Project Tasks

##### 4A. Task 1 - IMPORT DATA

**Provide screenshot of Imported table, make sure your screenshot contains the table loaded from products.csv.**

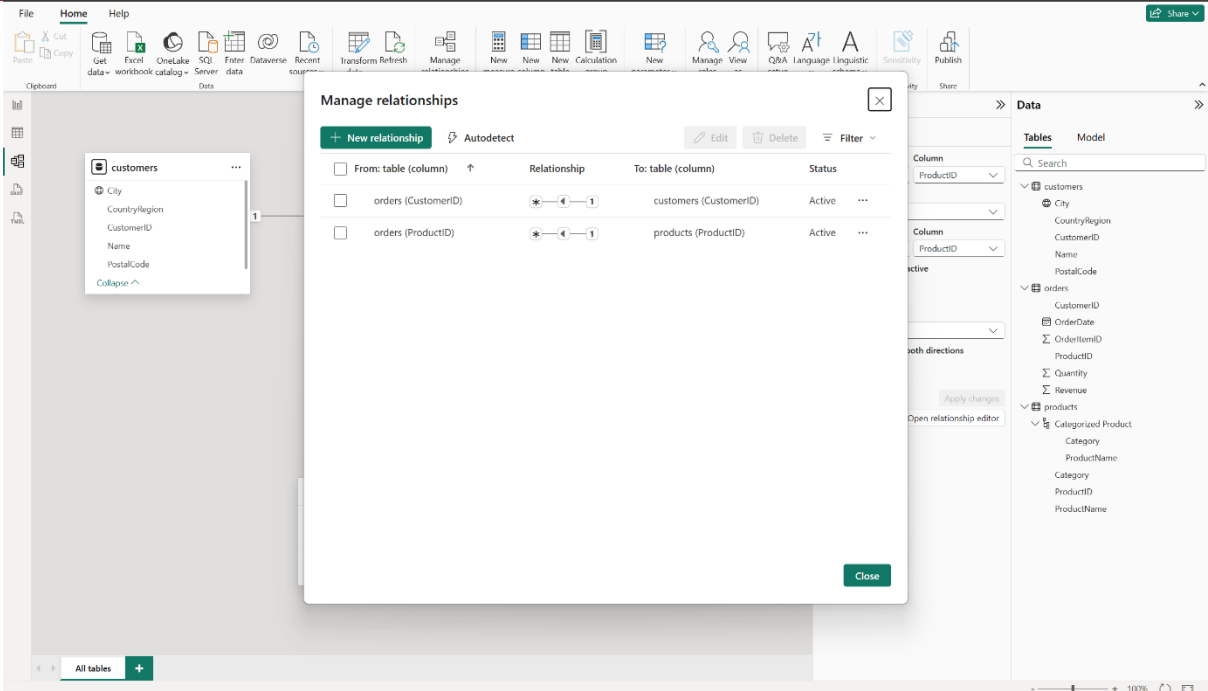
1. Open Microsoft Power BI Desktop.
2. On the welcome screen, click Get Data > Web.
3. In the "From Web" dialog, enter the URL for the customers dataset:  
<https://github.com/MicrosoftLearning/DP-900T00A-Azure-DataFundamentals/raw/master/power-bi/customers.csv>
4. Click Connect, verify the data preview, then click Load.
5. Repeat steps 2-4 for the products dataset URL:  
<https://github.com/MicrosoftLearning/DP-900T00A-Azure-DataFundamentals/raw/master/power-bi/products.csv>
6. Repeat steps 2-4 for the orders dataset URL:  
<https://github.com/MicrosoftLearning/DP-900T00A-Azure-DataFundamentals/raw/master/power-bi/orders.csv>
7. After loading all datasets, switch to Data View to verify that the tables have been loaded correctly.
8. A screenshot displaying the products.csv table with visible headers and sample rows.



#### **4B. Task 2 - EXPLORE A DATA MODEL**

**Provide screenshot of Data model, the screenshot should contain all the interrelationships between tables.**

1. In Power BI Desktop, select the Model view from the left-hand navigation pane.
2. Arrange the three tables (Customers, Products, Orders) so all are visible on the screen.
3. Observe the automatic relationships created by Power BI between the tables.
4. If needed, manually drag fields to create or adjust relationships, such as connecting ProductID between Products and Orders.
5. Select the Revenue column in the Orders table, open the Properties pane, and set the data type format to Currency.
6. In the Products table, right-click on the Category field and choose Create hierarchy.
7. Right-click on ProductName and add it to the created hierarchy under Category.
8. Rename the hierarchy to Categorized Products.
9. In the Customers table, set the data category of the City column to City using the properties pane.
10. A screenshot showing the entire data model with tables and relationships visible.



<div><div>+ New relationship</div><div>⚡ Autodetect</div><div><div>Edit</div><div>Delete</div><div>Filter</div></div></div>				
<input type="checkbox"/> From: table (column)	↑	Relationship	To: table (column)	Status
<input type="checkbox"/> orders (CustomerID)			customers (CustomerID)	Active ...
<input type="checkbox"/> orders (ProductID)			products (ProductID)	Active ...

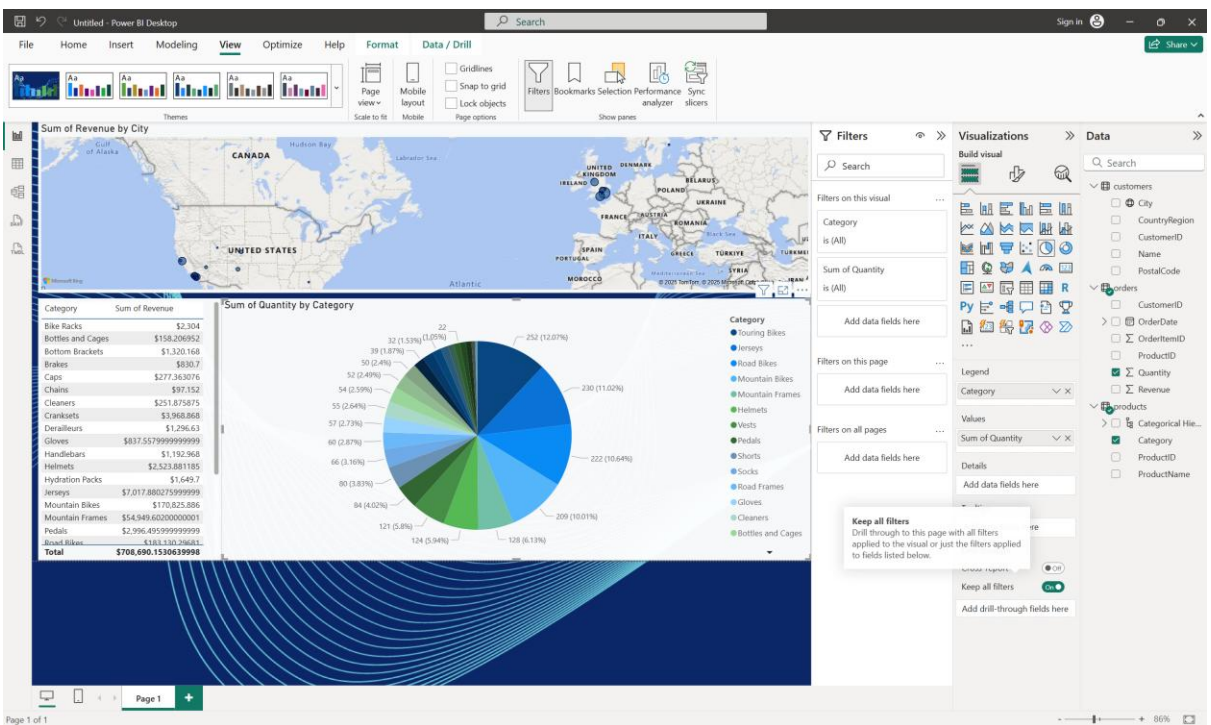




#### **4C. Task 3 - CREATE A REPORT**

**Provide screenshot of your Report, make sure screenshot includes all the visualizations in the report.**

1. Switch to the Report View in Power BI Desktop.
2. Add a Text Box from the ribbon and type "Sales Report."
3. Format the title: set font size to 32, make it bold, and center-align it.
4. From the Fields pane, expand the Products table and select the Categorized Products hierarchy—this creates a table visual.
5. In the Fields pane, select Revenue from the Orders table; it is added to the table visual.
6. Change the visual type to Stacked Column Chart using the Visualizations panel.
7. Enable drill-down by clicking the down arrow icon in the visual header.
8. Interact with the chart by selecting a product category to drill down and view product-level revenue.
9. Turn off drill-down after exploring.
10. Select a blank area and add a new visual by selecting Quantity from Orders and Category from Products.
11. Change this visual to a Pie Chart and resize/position it next to the revenue chart.
12. To create a sales map, select a blank space and add City from Customers and Revenue from Orders.
13. Resize as desired and test map interactions (zoom, select city).
14. Arrange all visuals neatly with consistent sizing for a professional dashboard layout.
15. Save the report file with an appropriate name (e.g., SalesAnalyticsReport.pbix).
- 16. A screenshot showing the full report page with all visuals displayed.**



### Summary

This project focused on building a data-driven sales analytics dashboard using Microsoft Power BI. The process began with importing and integrating multiple datasets—customers, products, and orders—into a cohesive data model. Key steps included creating relationships between tables, formatting data fields, and constructing hierarchical structures to improve analysis depth.

The interactive dashboard visualized essential sales metrics such as revenue by product category, sales quantity distribution, and geographic revenue breakdown by city. Features like drill-down and cross-filtering provided users with detailed insights and enabled dynamic exploration of sales performance. Overall, the project demonstrated how effective data modeling and visualization techniques empower businesses to make informed decisions and improve sales management strategies.

