## **Project Report: E-commerce Sales Performance Dashboard**

### **1. Project Objective**

The main goal of this project was to analyze a complex e-commerce sales dataset and transform it into a professional, interactive dashboard using Power BI.

The purpose of this dashboard is to provide clear and actionable insights that help the business track performance, understand customer behavior, and make smart, data-driven decisions to boost sales and profitability.

### **2. Project Workflow & Methodology**

The project was completed in several key stages:

**2.1. Data Modeling and Preparation**
* The project started with a raw sales dataset, which was loaded into Power BI.
* A robust and efficient **Star Schema** data model was created. A dedicated **Date Table** was built using DAX, which is essential for powerful time-based analysis (like comparing sales month over month).
* Proper relationships were established between the main sales table (Fact Table) and the supporting tables (Dimension Tables) to ensure all data is accurate and connected.

**2.2. KPI Development with DAX**
* To get a true picture of the business performance, advanced **DAX (Data Analysis Expressions)** formulas were written to create custom Key Performance Indicators (KPIs).
* Key measures created include: **Net Sales** (actual revenue after discounts), **Total Profit**, **Total Orders**, **Units Sold**, and **Average Order Value (AOV)**.

**2.3. Dashboard Design and Visualization**
* A modern, multi-page dashboard was designed with a clean user interface and a consistent dark theme for a professional look and feel.
* The dashboard is organized into four main pages, each serving a specific analytical purpose.

### **3. Key Features of the Dashboard**

The final dashboard is a comprehensive tool with the following pages:

**3.1. Home Page (Main Overview)**
* This page provides a high-level summary of the entire business at a glance.
* It features key KPI cards for **Profit (5bn)**, **Orders (36.9k)**, **Net Sales (4.42bn)**, and **Units Sold (110.9k)**.
* It includes visuals showing the most popular **Payment Methods** and sales performance by **Top Brands**.
* A dedicated **Slicer Panel** on the left allows users to easily filter the entire report by Product Category, Year, Month, and City.

**3.2. Performance Page (Seller & Product Deep Dive)**
* This page provides a detailed analysis of seller and product performance.
* It includes specific KPIs like **Average Seller Rating (3.56)** and **Total Unique Products (8835)**.
* Key visuals include a detailed table of **Top Sellers**, a bar chart for **Top Selling Products**, and a **Tree Map** showing sales distribution across different **Product Categories**.

**3.3. Customers Page**
* This page focuses on understanding customer behavior.
* It shows the breakdown of sales by **Customer Tier** (e.g., Platinum, Gold, Silver), helping to identify the most valuable customer groups. It also includes a breakdown of customers by **gender**.

**3.4. Sales Forecast Page**
* A dedicated page uses Power BI's built-in analytics engine for **Time Series Forecasting** to predict future Net Sales.
* This helps the business in planning for future inventory, marketing campaigns, and overall business strategy.

**3.5. Interactivity**
* The dashboard is fully interactive. It uses **Navigation Buttons** to easily switch between pages. It also has a **Drill-through** feature that allows users to right-click on a visual to see a more detailed breakdown on another page.

### **4. Technical Skills Applied**

* Data Modeling (Star Schema)
* DAX (Advanced Measures)
* Data Visualization & UI/UX Design
* Time Series Forecasting
* Business Intelligence & Analytics

### **5. Conclusion**
This project successfully transformed a raw dataset into a functional and insightful business intelligence tool. The final dashboard allows any user, from an executive to a manager, to easily understand the company's performance, identify key trends, and find opportunities for growth.