

# Final Project Proposal: Apple Retail Sales Analysis

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**Team Leader:** Omar Essam

## Project Description

The project involves an advanced SQL analysis of Apple retail sales data, encompassing over 250K rows of data. The analysis focuses on store performance, product trends, and warranty claims. By leveraging advanced SQL techniques, the project aims to solve real-world business problems, optimize query performance, and extract actionable insights from large datasets.

## Team Members & Roles

- **Omar Essam:** Data Analyst (responsible for SQL querying, data analysis, and team leadership).
- **Omar Ahmed:** Data Analyst (responsible for database management, optimization, and advanced SQL techniques).
- **Mohamed Magdy:** Data Analyst (responsible for interpreting insights, business recommendations, and trend analysis).
- **Heba Khaled:** Data Analyst (responsible for creating dashboards, visualizations, and reporting).

## Objectives

1. Analyze store performance across different regions using SQL queries.
2. Identify best-selling products and trends through data analysis.
3. Evaluate warranty claim trends and rejection rates to improve customer satisfaction.
4. Optimize SQL query performance for large datasets to ensure efficient data processing.
5. Provide actionable business insights through data-driven analysis and visualizations.

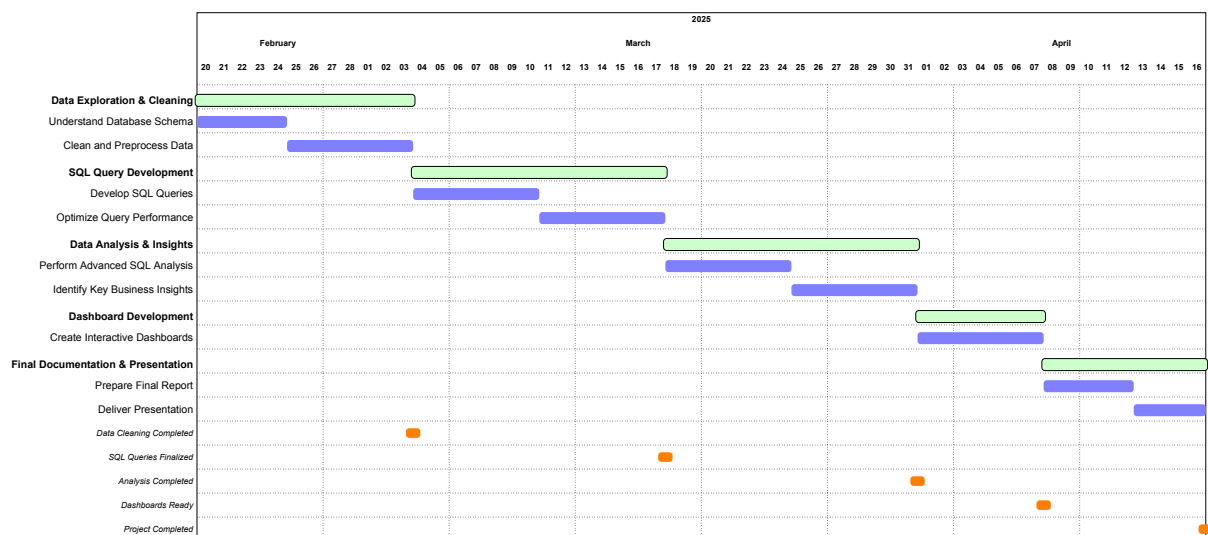
## Tools & Technologies

- **SQL:** For querying and analyzing the database.
- **Python:** For data cleaning, preprocessing, and advanced analytics (if needed).
- **Tableau/Power BI:** For creating interactive dashboards and visualizations.
- **Git:** For version control and team collaboration.
- **MySQL/PostgreSQL:** As the primary database management system.

## Milestones & Deadlines

- **Data Exploration & Cleaning (Week 1-2):** Understand the database schema and data structure. Clean and preprocess the data to ensure accuracy.
- **SQL Query Development (Week 3-4):** Develop and optimize SQL queries for analysis. Create indexes to improve query performance.
- **Data Analysis & Insights (Week 5-6):** Perform advanced SQL analysis (e.g., window functions, joins, aggregations). Identify key business insights and trends.
- **Dashboard Development (Week 7):** Create interactive dashboards using Tableau/Power BI. Ensure dashboards are user-friendly and visually appealing.
- **Final Documentation & Presentation (Week 8):** Prepare the final report and presentation. Deliver actionable recommendations based on the analysis.

## Project Timeline: Gantt Chart



## **Key Performance Indicators (KPIs)**

### **Data Cleaning & Processing**

- Ensure data is clean, structured, and well-documented.
- Complete data processing efficiently within the project timeline.

### **Analysis & Insights**

- Identify key analytical questions relevant to business needs.
- Provide clear, data-driven insights with effective visualizations.

### **Forecasting & Predictions**

- Use reliable models to generate accurate predictions.
- Compare multiple forecasting approaches for better accuracy.

### **Visualization & Reporting**

- Develop an interactive and user-friendly dashboard.
- Ensure fast and smooth dashboard performance.

### **Final Documentation & Presentation**

- Deliver a well-structured final report covering key findings.
- Provide actionable recommendations based on the analysis.