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Sales Analysis Project Documentation

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1. Project Planning & Management

1.1 Project Overview

The Sales Analysis Project aims to analyze sales data to identify trends, improve business decision-making, and optimize revenue generation. The project will focus on gathering, processing, and visualizing sales data to extract actionable insights.

1.2 Objectives

- Understand sales trends over time.
- Identify high-performing products and customer segments.
- Improve demand forecasting and inventory management.
- Generate interactive dashboards for data visualization.

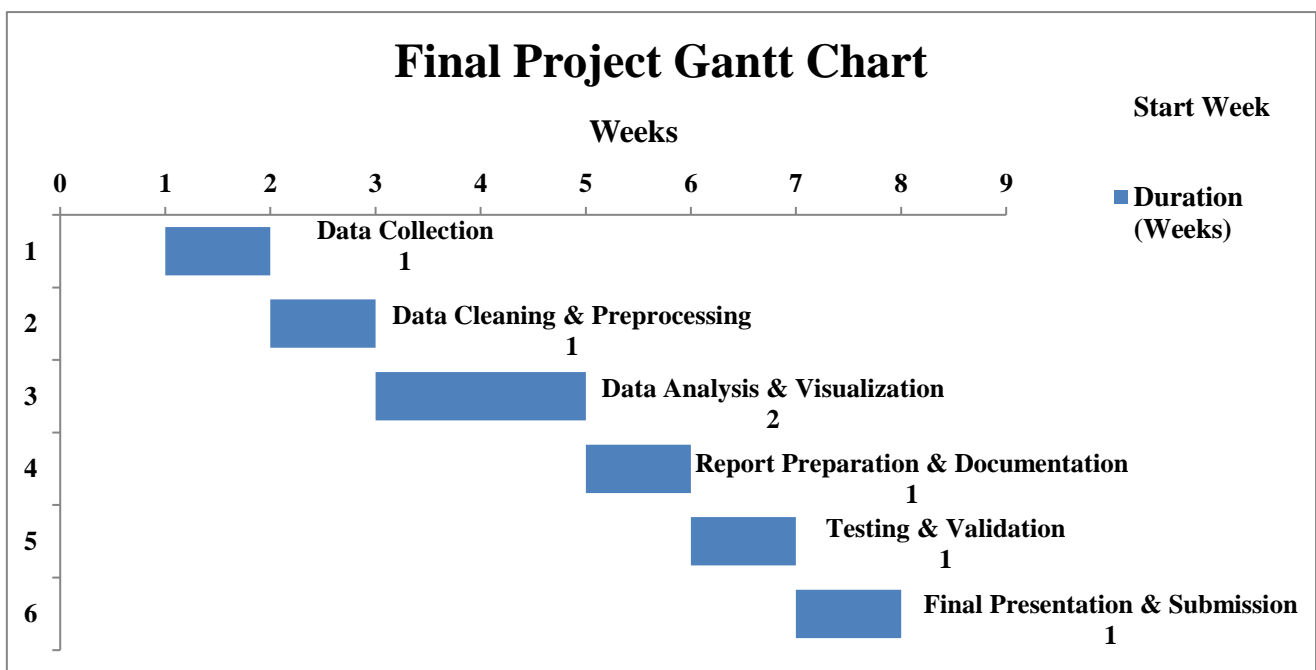
1.3 Scope

The project will include data collection from various sources, data preprocessing, exploratory data analysis, trend identification, and visualization. It will also involve generating automated reports and predictive insights for sales forecasting.

1.4 Project Timeline

To ensure the smooth execution of the project, we created a detailed timeline based on the phases of data analysis and presentation. The available duration is distributed as follows:

Task	Start Week	End Week	Duration (Weeks)
Data Collection	1	2	1
Data Cleaning & Preprocessing	2	3	1
Data Analysis & Visualization	3	5	2
Report Preparation & Documentation	5	6	1
Testing & Validation	6	7	1
Final Presentation & Submission	7	8	1



Phase 1: Data Collection (Week 1)

- Gather store transaction data from multiple sources.
- Ensure data completeness and integrity.
- Identify key variables for analysis.

Phase 2: Data Cleaning & Preprocessing (Week 2)

- Handle missing or inconsistent values.
- Standardize data formats for uniformity.
- Perform exploratory data analysis (EDA) to detect patterns and anomalies.

Phase 3: Data Analysis & Visualization (Weeks 3-4)

- Apply statistical techniques to identify trends.
- Generate charts and dashboards for insights.
- Implement machine learning models (if applicable).

Phase 4: Report Preparation & Documentation (Week 5)

- Summarize findings in a detailed report.
- Prepare case studies and comparisons.
- Document methodology, challenges, and solutions.

Phase 5: Testing & Validation (Week 6)

- Verify accuracy and reliability of insights.
- Conduct usability testing on the analytical dashboard.
- Make improvements based on feedback.

Phase 6: Final Presentation & Submission (Week 7)

- Create a structured presentation.
- Rehearse and refine the delivery.
- Submit the final report and supporting materials.

1.5 Task Assignment & Roles

Each team member has a defined role in the project.

- Data Collection: Responsible for acquiring and validating data sources.
- Data Cleaning & Processing: Ensuring data accuracy and consistency.
- Analysis & Visualization: Applying statistical methods and creating dashboards.
- Report Generation: Documenting insights and creating presentations.

1.6 Risk Assessment & Mitigation

- Data Quality Issues: Addressed by implementing validation techniques.
- Time Constraints: Managed by setting milestones and review checkpoints.
- Technical Challenges: Resolved through collaboration and research.

1.7 KPIs (Key Performance Indicators)

We will measure our project's success using key performance indicators such as data accuracy, and user adoption rate. These metrics will help ensure the efficiency and reliability of our analysis.

2. Literature Review

2.1 Research Background

Store data analysis is widely used in retail to improve decision-making. Previous studies highlight the importance of sales forecasting, inventory management, and customer behavior analysis. Various methodologies such as machine learning and statistical analysis have been applied to similar projects.

2.2 Feedback & Evaluation

We will regularly consult with our lecturer to get feedback on our approach and methodology. This will help us refine our techniques and ensure our project meets academic and industry standards.

2.3 Suggested Improvements

Based on evaluations, we will make necessary adjustments to improve our data processing techniques, visualizations, and overall analysis. Suggestions from peers and mentors will also be incorporated.

3. Requirements Gathering

3.1 Stakeholder Analysis

The key stakeholders in our project include store managers, data analysts, and customers. Store managers need insights to optimize inventory, analysts require accurate data processing, and customers benefit from better product availability.

3.2 User Stories & Use Cases

To illustrate how users interact with our system, we created user stories. For example, a store manager wants to see which products sell the most during weekends, while an analyst wants to generate sales trend reports.

3.3 Functional Requirements

The system will include features such as:

- Data import and export capabilities
- Interactive dashboards for visualization
- Automated trend detection and report generation

3.4 Non-functional Requirements

The system will be:

- **Efficient** : Process large datasets quickly
- **Secure**: Protect data from unauthorized access
- **User-friendly**: Provide an intuitive interface
- **Reliable**: Ensure minimal downtime and high availability