



THE YENEPLOYA INSTITUTE OF ARTS SCIENCE COMMERCE AND MANAGEMENT

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Balmatta, Mangalore

SALES PERFORMANCE ANALYSIS

PROJECT SYNOPSIS

Sales Performance Analysis

BCA Cyber Forensic Data Analytics & Cybersecurity

COMPUTER SCIENCE

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1.Introduction

The Retail Sales Performance Analysis project aims to analyze and visualize sales data from a retail store environment using business intelligence tools. The goal is to convert raw, unstructured retail transaction data into actionable insights that can help improve operational efficiency, understand consumer behavior, and boost profitability.

The dataset used includes transactional details such as order dates, product types, product categories, prices, and quantities sold. Initially, data preprocessing was conducted using Microsoft Excel to ensure data cleanliness and consistency. Tasks included null handling, standardizing headers, and creating new columns like total_price, hour, and day_of_week for deeper analysis.

The structured data was then stored in a MySQL database, enabling efficient querying and analysis using SQL. From there, Power BI was used to create interactive dashboards featuring KPIs, visual charts, and slicers that enable stakeholders to dynamically explore performance metrics across dimensions such as category, time, and region.

This project simulates a real-world business analytics pipeline, showcasing the integration of cleaning, storage, querying, and visualization. It offers a hands-on experience in building a decision-support system for retail businesses, especially small to mid-sized enterprises.

2. Methodology / Planning of Work

The methodology followed a clear, staged approach, aligning with typical data analytics lifecycles:

Step 1: Data Collection

The dataset was sourced from Kaggle and represents anonymized retail sales data.

Attributes included: Order ID, Product Name, Category, Sub-Category, Quantity, Price, Order Date, and Customer Location.

Step 2: Data Cleaning and Preprocessing (Excel)

Removed missing or duplicate entries.

Standardized column headers and date formats.

Created calculated columns: Total Revenue (Quantity × Price), Order Hour, Weekday, and Month.

Step 3: Structuring Data in MySQL

Imported the cleaned dataset into MySQL.

Created tables with primary and foreign key relationships to ensure data integrity.

Designed schemas for orders, products, and summary tables.

Step 4: SQL Analysis

Executed queries to derive:

Monthly revenue

Best-selling product categories

Regional sales performance

Average order value

Revenue contribution by sub-category

Step 5: Dashboard Development in Power BI

Connected Power BI to the MySQL database.

Built:

KPI cards (Total Revenue, Total Orders, Average Revenue)

Bar charts (Sales by category)

Line charts (Revenue trends)

Donut charts (Product contribution)

Slicers (for filtering by date, category, or product)

Step 6: Interaction & Finalization

Integrated interactive filters and date ranges.

Enabled export options for reports in PDF or Excel.

Conducted internal testing for validation.

Step 7: Documentation & Version Control

Project was documented in Word and hosted on GitHub for backup and version management.

3. Facilities Required for Proposed Work

To implement the project effectively, the following resources were necessary:

Software Requirements

Microsoft Excel 2019+: For initial cleaning and transformation of data.

MySQL Workbench: For structuring and querying datasets.

Power BI Desktop: For creating rich, dynamic dashboards.

GitHub: For hosting project files, code snippets, and reports.

Python (optional): For future automation or data enhancement tasks.

Hardware Requirements

Windows PC/Laptop with the following minimum specs:

Processor: Intel Core i5 (or equivalent)

RAM: 8 GB

Storage: 1 GB free disk space

OS: Windows 10/11

Display: 1366×768 or higher

Additional Requirements

Stable internet connection for:

Downloading tools

Syncing with GitHub

Accessing Power BI features

Access to online documentation and support forums

Continuous guidance from academic mentors and subject experts

4. References

Kaggle – Source of retail datasets

Microsoft Power BI Docs – Official BI tool documentation

MySQL Documentation – Reference for SQL syntax and data structuring

GitHub – For source control and project sharing

Python Docs – Future extensibility and scripting support

Analytics Vidhya – Learning platform for analytics and data science



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