



Innovation Centre for Education



PROJECT SYNOPSIS

FOR

NEXORA-SALES

PERFORMANCE ANALYSIS

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22BDACC084

BCA (Big Data Analytics, Cloud Computing and Cybersecurity) With IBM

Yenepoya Institute of Arts Science Commerce and Management

Mangalore

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Submitted to:



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YENEPOYA INSTITUTE OF ARTS, SCIENCE, COMMERCE AND
MANAGEMENT
BALMATTA, MANGALORE
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I. TITLE OF THE PROJECT

NEXORA-Sales Performance Analysis

II. STATEMENT OF THE PROBLEM

In many organizations, analyzing sales performance is a crucial but challenging task. Companies struggle to make data-driven decisions due to scattered data, lack of real-time insights, and ineffective visualization tools. Traditional methods of sales analysis often lead to delays in identifying trends, inefficiencies in sales strategies, and missed business opportunities. This project aims to develop a web-based Sales Performance Analysis system that integrates Python Flask for backend processing and Power BI for visualization. The system will help businesses monitor their sales data, track key performance indicators (KPIs), and generate actionable insights efficiently.

III. WHY THIS PARTICULAR TOPIC CHOSEN?

Sales data is a vital asset for any business, and effective analysis can lead to better decision-making, improved revenue generation, and enhanced operational efficiency. The project was chosen because:

- It addresses a real-world business challenge.
- It leverages modern technologies like Python Flask and Power BI for an efficient solution.
- It offers an opportunity to integrate data analytics with web-based dashboards.
- It aligns with industry trends of using data-driven decision-making.
- It has future scope for AI/ML integration for predictive analytics.

IV. OBJECTIVE AND SCOPE

The primary objective of this project is to develop a web-based system that allows businesses to analyze and visualize sales performance efficiently. The project will:

- Provide an intuitive dashboard for sales performance monitoring.
- Enable real-time tracking of KPIs such as revenue, profit, customer trends, and sales team efficiency.
- Offer data-driven insights to optimize sales strategies.
- Support integration with external data sources like databases, Excel files, or APIs.
- Facilitate user-friendly data visualization through Power BI.
- Ensure scalability for future enhancements like AI-based predictive analytics.

V. METHODOLOGY

The project follows an agile methodology, ensuring continuous improvements and flexibility. The methodology includes:

1. **Requirement Analysis** – Identifying key features and user requirements.
2. **System Design** – Creating database schemas, architecture, and interface mockups.
3. **Development** – Implementing Python Flask for backend operations and Power BI for data visualization.
4. **Integration** – Connecting the frontend and backend to ensure smooth data flow.
5. **Testing** – Performing unit testing, integration testing, and user acceptance testing.
6. **Deployment** – Deploying the application on a cloud or local server.
7. **Maintenance & Future Enhancements** – Continuous monitoring and updates.

VI. PROCESS DESCRIPTION

The system consists of several modules:

- **User Authentication Module** – Secure login and access control.
- **Data Ingestion Module** – Extracting sales data from databases or APIs.
- **Data Processing Module** – Cleaning and structuring data using Python Flask.
- **Visualization Module** – Power BI dashboards displaying KPIs.
- **Reporting Module** – Generating reports on sales performance.
- **User Management Module** – Role-based access for different users.

A data flow diagram (DFD) and process flow will be created to illustrate the working of these modules.

VII. RESOURCES AND LIMITATIONS

Resources Required:

- **Hardware:** A server or cloud platform for hosting the application.
- **Software:** Python Flask, Power BI, MySQL/PostgreSQL, HTML/CSS/JavaScript.
- **Data Sources:** Historical sales data, APIs, Excel sheets.
- **Development Tools:** Visual Studio Code, Jupyter Notebook, Power BI Desktop.

Limitations:

- Initial setup may require a Power BI Pro license for advanced features.
- Data latency issues if the source updates are slow.

- May require third-party integrations for additional data sources.

VIII. TESTING TECHNOLOGIES USED

Testing will be conducted using:

- **Unit Testing:** Flask-based API testing with PyTest.
- **Integration Testing:** Ensuring seamless data flow between Flask and Power BI.
- **User Interface Testing:** Validating frontend functionality and responsiveness.
- **Performance Testing:** Measuring the system's response time and scalability.
- **Security Testing:** Checking authentication and data access control measures.

IX. CONCLUSION

The Sales Performance Analysis project aims to bridge the gap between sales data and decision-making by providing real-time insights through a web-based interface. By integrating Python Flask with Power BI, the system offers businesses an efficient, scalable, and user-friendly platform for analyzing sales performance. The project showcases innovation in data analytics, enabling companies to make informed decisions and improve their sales strategies. Future enhancements can include AI-driven predictive analytics, automation, and advanced reporting features to further enhance its capabilities.