“FinSight: Smart Expense & Budget Analyzer”

A

Report submitted in partial fulfilment of the requirement for the

degree of

B.Tech.

In

Computer Science & Engineering

(Data Science)

By

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Under the guidance of

Ms. Alpana Singh

ASSISTANT PROFESSOR

Project Id: **26_DS_3A_13**

Pranveer Singh Institute of Technology, Kanpur
Dr A P J A K Technical University
Lucknow

DECLARATION

This is to certify that Report entitled **"FinSight: Smart Expense & Budget Analyzer"** which is submitted by me in partial fulfilment of the requirement for the award of degree B.Tech. in Computer Science and Engineering (Data Science) to Pranveer Singh Institute of Technology, Kanpur Dr. A P J A K Technical University, Lucknow comprises only our own work and due acknowledgement has been made in the text to all other material used.

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CERTIFICATE

This is to certify that Report entitled **"FinSight: Smart Expense & Budget Analyzer"** which is submitted by **Abhishek Chaurasiya (2301641540004) Aniruddh Pratap Singh (2301641540034) Vishwajeet Gupta (2301641540212) Arpan Shukla (2301641540051) Chaitanya Pant (2301641540070) Aryan Srivastava (2301641540055)** in partial fulfilment of the requirement for the award of degree B.Tech. in Computer Science & Engineering (Data Science) to Pranveer Singh Institute of Technology, Kanpur affiliated to Dr. A P J A K Technical University, Lucknow is a record of the candidate own work carried out by him under my supervision. The matter embodied in this report is original and has not been submitted for the award of any other degree.

Signature:

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Signature:

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We also do not like to miss the opportunity to acknowledge the contribution of all faculty members of the department for their kind assistance and cooperation during the development of our project. Last but not the least, we acknowledge our friends for their contribution in the completion of the project.

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ABSTRACT

*This project introduces **FinSight: Smart Expense & Budget Analyzer**, a web-based application designed to empower individuals with intelligent personal financial management. The work addresses the common challenges of fragmented financial data, the limitations of traditional historical reporting tools, and the absence of robust future expense forecasting.*

***FinSight** implements a comprehensive data science pipeline, beginning with automated ingestion and rigorous cleaning of raw financial transaction CSVs. An intelligent, rule-based engine categorizes transactions into a standardized framework, enabling clear and consistent financial oversight. The application provides intuitive, interactive visualizations of spending patterns over time and across categories, facilitating immediate insights into financial behavior. A core feature is the integration of a Seasonal AutoRegressive Integrated Moving Average (**SARIMA**) model, which accurately forecasts future aggregate monthly expenses, offering users a proactive tool for budgeting and financial planning.*

*The system is built on a modular client-server architecture, utilizing Streamlit for the user-friendly frontend and **FastAPI** for a high-performance backend, ensuring efficiency and scalability. Deployed on a cost-effective self-hosted server, **FinSight** demonstrates a practical solution for accessible financial intelligence. While the **SARIMA** model effectively captures trends, its sensitivity to sudden structural breaks was noted, indicating avenues for future enhancements like AI-driven anomaly detection and more granular forecasting. This project successfully transforms raw financial data into actionable insights, promoting improved financial literacy and proactive decision-making.*

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