

BUSINESS ANALYTICS WITH SPREADSHEET MODELLING

(MGT1058)

Digital Assignment-1

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Objective:

The primary objective of this project is to build a comprehensive and interactive business analytics dashboard that captures, analyzes, and predicts startup funding trends in India. The goal is to transform raw funding data into a structured and intelligent decision-support tool by applying a range of analytics techniques. Through spreadsheet modeling, we structured and prepared the data for analysis. Descriptive analytics was then used to generate insightful visualizations—such as bar charts, line plots, and scatter diagrams—to explore historical funding patterns across years, cities, industries, and investment types.

In addition, predictive analytics techniques were implemented to forecast funding amounts using models like ARIMA and Gradient Boosting Regressor. Clustering methods enabled the grouping of startups based on shared funding characteristics, providing deeper segmentation insights. Contemporary tools like Streamlit and Plotly were employed to deliver a real-time, responsive dashboard experience. This integrated approach empowers entrepreneurs, investors, and policymakers to make informed, data-driven decisions.

Problem Statement:

Despite the rapid growth of the Indian startup ecosystem, funding-related data remains fragmented, inconsistently formatted, and difficult to analyze comprehensively. Traditional tools such as spreadsheets have limited capabilities when it comes to dynamic data exploration or forecasting. Structured spreadsheet modeling helps in organizing this scattered data into a usable format, but without the added value of descriptive analytics and meaningful visualization, stakeholders struggle to derive actionable insights. Similarly, the absence of predictive forecasting and clustering makes it difficult to identify trends or understand investment behavior patterns across segments.

Furthermore, there is a growing need to adopt modern tools and technologies that make data analysis more interactive, accessible, and user-friendly. Without a consolidated system that merges these techniques and tools into a unified solution, the potential of startup funding data remains underutilized.

How Our Project Solves the Problem

Our project offers an end-to-end solution that bridges the gap between scattered data and actionable business insights. It begins with structured spreadsheet modeling to clean and organize funding data sourced from multiple platforms. Next, descriptive analytics techniques are applied to create engaging visualizations that reveal trends by year, industry, and geography. Predictive analytics methods enhance the platform's capabilities by forecasting future funding scenarios based on historical data and input parameters.

By incorporating clustering techniques, we categorize startups based on similarities in their funding behavior, allowing for more targeted analysis. While prescriptive analytics was considered as an optional extension, we also included basic recommendation strategies derived from the models. The dashboard was developed using contemporary tools like Streamlit and Plotly to ensure real-time interaction, high responsiveness, and ease of use. As a result, users without deep technical expertise can intuitively explore data, gain insights, and make confident funding decisions based on both historical patterns and future projections.