PROJECT REPORT

Empowering India: Analysing the Evolution of Union Budget Allocations for Sustainable Growth

Team ID: LTVIP2026TMIDS37529
Team Size: 2
Team Leader: Beeram Yeswanth Reddy
Team Member: Kalegalla Umar Mohiddin
Submission Date: 18-02-2025

1. INTRODUCTION

1.1 Project Overview

This project analyzes the evolution of Union Budget allocations in India over recent financial years. It provides structured, data-driven insights using interactive visualization techniques to understand sector-wise growth trends and their contribution to sustainable development. By transforming raw financial data into dashboards and analytical views, the system enables users to interpret allocation patterns efficiently.

1.2 Purpose

The purpose of this project is to promote financial transparency, improve policy understanding, and support sustainable growth analysis through structured budget data analytics and visualization.

2. IDEATION PHASE

2.1 Problem Statement

There is no centralized and interactive platform that enables efficient analysis of historical Union Budget allocations. Budget data is often presented in complex documents, making it difficult to evaluate its impact on sustainable growth sectors such as health, education, infrastructure, and environment.

2.2 Empathy Map Canvas

• **Users:** Researchers, Students, Policymakers, Citizens
• **Think:** How is the budget allocated across sectors?
• **Feel:** Need transparency and clarity
• **See:** Complex financial documents and reports
• **Say:** Budget data is difficult to analyze
• **Pain Points:** Unstructured data and lack of visualization
• **Gain:** Clear insights, trend comparison, forecasting ability

2.3 Brainstorming

• Interactive dashboard
• Sector-wise trend analysis
• Forecasting of allocation trends
• Sustainability mapping
• Downloadable analytical reports

3. REQUIREMENT ANALYSIS

3.1 Customer Journey Map

1. User registers or logs in
2. User accesses the dashboard
3. User selects sector or year filters
4. User views charts and allocation trends
5. User downloads analytical report

3.2 Solution Requirement

• User Authentication
• Data Upload & Storage
• Data Cleaning & Processing
• Visualization Dashboard
• Forecasting Module
• Report Generation

3.3 Data Flow Diagram (DFD)

User → Login/Register → Dashboard → Data Processing → Database → Visualization → Report Download

3.4 Technology Stack

• Frontend: HTML, CSS, JavaScript
• Backend: Python (Flask)
• Database: MySQL / MongoDB
• Visualization: Tableau
• Analytics: Python (Pandas, NumPy)

4. PROJECT DESIGN

4.1 Problem–Solution Fit

The solution converts raw Union Budget documents into structured, visual, and interactive insights. It bridges the gap between complex financial records and user-friendly analytical dashboards.

4.2 Proposed Solution

A web-based analytical platform that:

• Analyzes historical Union Budget data
• Displays interactive Tableau dashboards
• Enables year-wise and sector-wise analysis
• Provides clear allocation comparison

4.3 Solution Architecture

Data Sources → Data Collection → Database → Data Processing → Analytics Engine → Dashboard → User

5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

• Sprint 1: Data Collection & Authentication
• Sprint 2: Data Processing & Dashboard Integration

• Sprint 3: Analytics & Testing
• Sprint 4: Final Deployment

6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

• Dashboard loads within acceptable time (3–5 seconds)
• Supports multiple user access
• Accurate visualization output
• Secure login validation

7. RESULTS

7.1 Output Screenshots

• Login Page
• Dashboard with sector-wise analysis
• Year-wise comparison charts
• Forecasting insights
• Report generation

7.2 Tableau Dashboard Link

The interactive Tableau Public dashboard integrated into the system:

https://public.tableau.com/app/profile/umar.mohiddin.kalegalla/viz/EmpoweringIndia_17714293793370/TotalBudget-CategoryWise

8. ADVANTAGES & DISADVANTAGES

Advantages

• Promotes transparency in financial data
• Easy-to-understand visualizations
• Supports academic and policy research
• Scalable architecture

Disadvantages

• Dependent on dataset accuracy
• Forecasting accuracy varies with economic conditions

9. CONCLUSION

The project successfully provides a structured and analytical approach to understanding Union Budget allocations and their contribution to sustainable development in India. Through data preprocessing and interactive visualization, the system enhances clarity, transparency, and informed analysis.

10. FUTURE SCOPE

• Integration with State Budgets
• Real-time economic data integration
• Mobile application development
• Advanced AI-based forecasting models

11. APPENDIX

Flask Backend Code

```
from flask import Flask, render_template

app = Flask(__name__)

@app.route('/')

def home():

    return render_template('index.html')
```

```
if __name__ == '__main__':
    app.run(debug=True)
```