

# Project Report Format

## 1. INTRODUCTION

### 1.1 Project Overview

The “Empowering India – Union Budget Analysis” project is a web-based analytical platform developed to study and visualize the evolution of India’s Union Budget allocations across multiple sectors over different financial years. The system integrates data visualization dashboards created using Tableau and deploys them through a Flask-based web application. The project converts complex budget datasets into interactive visual insights, enabling users to understand allocation trends, sector growth, and government spending patterns efficiently.

### 1.2 Purpose

The main purpose of this project is to:

Simplify Union Budget data analysis.

Improve transparency in public financial information.

Provide interactive visual analytics for better understanding.

Support students, researchers, and policymakers in analyzing economic trends.

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## 2. IDEATION PHASE

### 2.1 Problem Statement

Union Budget information is generally available in lengthy documents and static reports, making it difficult for users to analyze sector-wise allocations and trends. There is a need for an interactive system that transforms raw budget data into clear visual insights.

### 2.2 Empathy Map Canvas

**Users:** Students, Researchers, Economists, Policymakers, Citizens

**Think:** How government funds are allocated across sectors?

**Feel:** Need simple and understandable budget insights.

**See:** Large and complex PDF budget documents.

**Say:** Budget analysis is difficult without visualization tools.

### **Pain Points:**

- Unstructured datasets
- Lack of interactive dashboards
- Difficult comparison across years

### **Gain:**

- Easy visualization
- Better trend understanding
- Interactive analysis

## **2.3 Brainstorming**

- Interactive web dashboard
  - Sector-wise visualization
  - Year comparison charts
  - Tableau storytelling dashboards
  - Web deployment using Flask
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## **3. REQUIREMENT ANALYSIS**

### **3.1 Customer Journey Map**

- User opens the website.
- Accesses the home dashboard.
- Navigates between dashboards and stories.
- Views visual analytics.
- Understands budget trends and insights.

### **3.2 Solution Requirement**

- User Authentication
- Data Upload C Storage
- Data Cleaning C Processing
- Visualization Dashboard
- Forecasting Module
- Report Generation

### **3.3 Data Flow Diagram (DFD)**

User → Flask Web Server → HTML Interface → Tableau Dashboard → Visualization Output

### **3.4 Technology Stack**

- Frontend: HTML, CSS, JavaScript
  - Backend: Python / Flask
  - Database: MySQL / MongoDB
  - Visualization: Matplotlib / Power BI
  - Machine Learning: Scikit-learn
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## **4. PROJECT DESIGN**

### **4.1 Problem Solution Fit**

The proposed solution converts raw Union Budget datasets into structured visual dashboards, allowing users to easily interpret government expenditure trends.

### **4.2 Proposed Solution**

A web-based analytical system that:

- Displays Union Budget dashboards.
- Provides interactive data visualization.
- Presents storytelling dashboards for insights.
- Enhances understanding of national budget allocations.

### **4.3 Solution Architecture**

Dataset → Tableau Visualization → Flask Application → Web Interface → User

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## **5. PROJECT PLANNING & SCHEDULING**

### **5.1 Project Planning**

**Phase 1:** Dataset collection and analysis

**Phase 2:** Dashboard creation using Tableau

**Phase 3:** Flask web application development

**Phase 4:** Integration and testing

**Phase 5:** Deployment and documentation

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## **6. FUNCTIONAL AND PERFORMANCE TESTING**

### **6.1 Performance Testing**

- Dashboard loads within 3–5 seconds.
  - Smooth navigation between sections.
  - Correct visualization rendering.
  - Responsive design across devices.
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## **7. RESULTS**

### **7.1 Output Screenshots**

- Login Page
  - Dashboard with sector-wise charts
  - Year-wise comparison graph
  - Forecasting output
  - Report download
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## **8. ADVANTAGES & DISADVANTAGES**

### **Advantages:**

- Easy understanding of budget data
- Interactive visual analysis
- Improves transparency
- User-friendly interface
- Web-based accessibility

### **Disadvantages:**

- Depends on dataset accuracy
  - Requires internet for Tableau dashboards
  - Limited predictive analytics
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## **9. CONCLUSION**

The project successfully demonstrates how Union Budget data can be transformed into meaningful insights using visualization tools. By integrating Tableau dashboards with a Flask web application, the system provides an interactive platform for analyzing government expenditure trends and supports better understanding of economic planning.

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## **10. FUTURE SCOPE**

- Add real-time budget updates
  - AI-based forecasting models
  - Mobile application development
  - State budget comparison
  - User analytics dashboard
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## **11. APPENDIX**

### **Source Code:**

#### **Flask code:**

```
from flask import Flask, render_template

app = Flask(__name__)

@app.route('/')
def index():
    return render_template('index.html')

if __name__ == '__main__':
    app.run(debug=True, port=5000)
```

## HTML code:

```
<!DOCTYPE html>

<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Union Budget India</title>
    <!-- Bootstrap CSS -->
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css" rel="stylesheet">
<style>
    body {
        background-color: #1a3a5c;
        color: white;
    }
    .navbar {
        background-color: #1a3a5c;
    }
    .hero-section {
        padding: 80px 0;
    }
    .btn-get-started {
        background-color: #00bcd4;
        color: white;
        border-radius: 25px;
        padding: 10px 30px;
    }
    .section-title {
        text-align: center;
        color: #1a3a5c;
        font-weight: bold;
        margin-bottom: 30px;
    }
}
```

```

section {
    scroll-margin-top: 70px;
}

.tableau-container {
    width: 100vw;
    min-height: 1500px;
    padding: 20px 0;
}

html {
    scroll-behavior: smooth;
}

</style>

</head>

<body>

<!-- Navbar -->

<nav class="navbar navbar-expand-lg navbar-dark fixed-top">

    <div class="container">

        <a class="navbar-brand fw-bold" href="#">UNION BUDGET - INDIA</a>

        <div class="collapse navbar-collapse justify-content-end">
            <ul class="navbar-nav">
                <li class="nav-item"><a class="nav-link" href="#home">Home</a></li>
                <li class="nav-item"><a class="nav-link" href="#about">About</a></li>
                <li class="nav-item"><a class="nav-link" href="#dashboard">Dashboard</a></li>
                <li class="nav-item"><a class="nav-link" href="#story">Story</a></li>
            </ul>
        </div>
    </div>
</nav>

<!-- Home Section -->

<section id="home" class="hero-section">

    <div class="container">

```

```
<div class="row align-items-center">
  <div class="col-md-6">
    <h1 class="fw-bold">India-Evolution of Union Budget Allocations for Sustainable Growth</h1>
    <p>Indian Union Budget FY 21-22 till 23-24</p>
    <a href="#dashboard" class="btn btn-get-started">Get Started</a>
  </div>
  <div class="col-md-6 text-center">
    
  </div>
</div>
</div>
</section>
```

```
<!-- About Section -->
<section id="about" style="background-color: white; color: #1a3a5c; padding: 60px 0;">
  <div class="container">
    <h2 class="section-title">About</h2>
    <p class="text-center">
      This project analyzes the Evolution of Union Budget Allocations for Sustainable Growth in India.
      It covers data from FY 2021-22 to FY 2023-24, focusing on ministry-wise and scheme-wise budget allocations.
    </p>
  </div>
</section>
```

```
<!-- Dashboard Section -->
<section id="dashboard" style="background-color: #f5f5f5; padding: 60px 0;">
  <div class="container-fluid">
    <h2 class="section-title">DASHBOARD</h2>
    <div class="tableau-container">
      <iframe
        src="https://public.tableau.com/views/EmpoweringIndiaUnionBudgetAnalysis/InsightsforUnionBudgetAllocation2021-2022?:embed=yes&:display_count=yes&:showVizHome=no&:language=en-US">
    </div>
  </div>
</section>
```

```

width="100%"

height="900px"

frameborder="0"

style="width: 100vw; height: 900px; border: none;" allowfullscreen="true">

</iframe>

</div>

</div>

</section>

<!-- Story Section -->

<section id="story" style="background-color: white; padding: 60px 0;">

<div class="container-fluid">

<h2 class="section-title">STORY</h2>

<div class="tableau-container">

<div class='tableauPlaceholder' id='viz1771670834358' style='position: relative'><noscript><a href='#'><img alt=''

src='https://public.tableau.com/static/images/Em/EmpoweringIndiaUnionBudgetAnalysis/Story1/1_rss.png' style='border: none' /></a></noscript><object class='tableauViz' style='display:none;'><param name='host_url' value='https%3A%2F%2Fpublic.tableau.com%2F' /> <param name='embed_code_version' value='3' /> <param name='site_root' value="/" /><param name='name' value='EmpoweringIndiaUnionBudgetAnalysis/Story1' /><param name='tabs' value='yes' /><param name='toolbar' value='yes' /><param name='static_image' value='https://public.tableau.com/static/images/Em/EmpoweringIndiaUnionBudgetAnalysis/Story1/1.png' /> <param name='animate_transition' value='yes' /><param name='display_static_image' value='yes' /><param name='display_spinner' value='yes' /><param name='display_overlay' value='yes' /><param name='display_count' value='yes' /><param name='language' value='en-US' /></object></div> <script type='text/javascript'>
var divElement = document.getElementById('viz1771670834358'); var vizElement =
divElement.getElementsByTagName('object')[0];
vizElement.style.width='1200px';vizElement.style.height='850px'; var scriptElement =
document.createElement('script'); scriptElement.src =
'https://public.tableau.com/javascripts/api/viz_v1.js';
vizElement.parentNode.insertBefore(scriptElement, vizElement); </script>

</div>

</div>

</section>

<!-- Bootstrap JS -->

<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/js/bootstrap.bundle.min.js"></script>

```

</body>

</html>

### **Dataset Link:**

<https://www.kaggle.com/datasets/prasenjitsharma/indian-union-budget-fy-21-22-till-23-24>

### **GitHub's Project Demo Link:**

#### **1. GitHub link:**

<https://github.com/thrishuna/Analysing-The-Evolution-of-Union-Budget-Allocation-for-Sustainable-Growth>

#### **2. Project Demo Link:**

<https://drive.google.com/file/d/1QFMV1oCQrTAGImGNfi0nPlMcOJIeal0F/view?usp=sharing>

## TABLEAU PUBLIC LINKS:

### 1. DASHBORD 1 LINK:

<https://public.tableau.com/app/profile/dataanalyticswithtableau/viz/EmpoweringIndiaUnionBudgetAnalysis/InsightsforUnionBudgetAllocation2021-2022?publish=yes>

### 2. DASHBORD 2 LINK:

<https://public.tableau.com/app/profile/dataanalyticswithtableau/viz/EmpoweringIndiaUnionBudgetAnalysis/InsightsforUnionBudgetAllocation20222024?publish=yes>

### 3. STORY 1 LINK:

<https://public.tableau.com/app/profile/dataanalyticswithtableau/viz/EmpoweringIndiaUnionBudgetAnalysis/Story1?publish=yes>

### 4. STORY 2 LINK:

<https://public.tableau.com/app/profile/dataanalyticswithtableau/viz/EmpoweringIndiaUnionBudgetAnalysis/Story2?publish=yes>

### 5. STORY 3 LINK:

<https://public.tableau.com/app/profile/dataanalyticswithtableau/viz/EmpoweringIndiaUnionBudgetAnalysis/Story3?publish=yes>