Project Report

1. INTRODUCTION

1.1 Project Overview

This project focuses on performing a comprehensive analysis of students' food choices in a college setting. Using Tableau, the project extracts, processes, and visualizes data related to dietary habits to identify trends, preferences, and possible improvements in food offerings. It also provides dashboards and interactive visual stories to assist stakeholders in making data-driven decisions.

1.2 Purpose

The purpose of this project is to:
- Understand students' food preferences and consumption patterns.
- Use data visualization to identify nutritional gaps or areas of improvement.
- Help college administrations plan healthier and more appealing food strategies.
- Demonstrate the capabilities of Tableau in transforming raw data into meaningful insights.

2. IDEATION PHASE

2.1 Problem Statement

College students often face limited and repetitive food choices in campus cafeterias, which may lead to poor nutrition and dissatisfaction. Without proper analysis of student preferences and dietary patterns, it becomes difficult for institutions to implement effective food strategies. There is a need for a system that can analyze food consumption data and provide actionable insights to improve dietary offerings.

2.2 Empathy Map Canvas

Says:
- "The food is always the same!"
- "I wish we had more variety."

Thinks:
- "Why can't they add healthier options?"
- "I don't feel energetic after eating at the mess."

Does:
- Skips meals frequently
- Buys outside food often

Feels:
- Dissatisfied with the food choices
- Worried about nutrition & health

2.3 Brainstorming

Some of the key ideas explored during brainstorming:
- Collect food choice data from college students.
- Use Tableau to create interactive dashboards.
- Track consumption patterns across different days/weeks.
- Suggest dietary strategies based on visualization insights.
- Integrate dashboards for real-time display on web interface.

3. REQUIREMENT ANALYSIS

3.1 Customer Journey Map

The customer (student) interacts with the college cafeteria regularly. Their experience includes evaluating menu options, choosing meals, and providing feedback. The journey map captures touchpoints, emotions, and expectations to help improve service.

3.2 Solution Requirement

The system should:
- Extract dietary data from the database.
- Prepare and clean the data.
- Visualize data in Tableau with interactive dashboards.
- Enable performance testing and web integration for real-time access.

3.3 Data Flow Diagram

1. Data Source (Cafeteria DB) → 2. Data Extraction → 3. Data Cleaning → 4. Tableau Visualization → 5. Dashboard/Story View

3.4 Technology Stack

- Tableau for data visualization
- SQL for data extraction
- Web platform (optional) for integration

4. PROJECT DESIGN

4.1 Problem Solution Fit

This project directly addresses the issue of unoptimized dietary planning by analyzing real student food choices through Tableau.

4.2 Proposed Solution

Develop dashboards that present visual insights into students' eating patterns, popular items, and preferences across time slots.

4.3 Solution Architecture

The architecture involves data extraction, preprocessing, visualization using Tableau, and optional web-based dashboard integration.

5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

The project was divided into multiple phases:
- Week 1: Data Collection & Extraction
- Week 2: Data Preparation
- Week 3: Visualization and Dashboard Creation
- Week 4: Performance Testing and Integration

6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

Performance was tested by loading large datasets into Tableau and measuring the response time of dashboard elements. Optimization was done by using data extracts and filters efficiently.

7. RESULTS

7.1 Output Screenshots

The final Tableau dashboards included:
- Most preferred food items
- Weekly consumption trends
- Nutritional analysis by category

8. ADVANTAGES & DISADVANTAGES

Advantages:
- Visual and interactive insights
- Easy-to-use dashboards
- Improved dietary strategy suggestions

Disadvantages:

- Limited to available data
- Requires Tableau license for full access

9. CONCLUSION

This project successfully demonstrated how Tableau can be used to analyze college food choices. The visual insights help decision-makers to improve menu offerings and create better dietary strategies for students.

10. FUTURE SCOPE

- Include student feedback forms
- Add real-time integration with cafeteria systems
- Use predictive analysis to forecast future food demands

11. APPENDIX

Source Code (if any): N/A
Dataset Link: [To be attached]
GitHub & Project Demo Link: [To be attached]