PROJECT REPORT

Date: 20 JUNE 2025
Team ID: LTVIP2025TMI47618
Project Name: Comprehensive Analysis and Dietary Strategies with Tableau – A College Food Choices Case Study
Maximum Marks: [ ]

1.Problem Statement

Many college students follow diverse dietary habits (vegetarian, vegan, pescatarian, omnivorous). However, institutions lack accessible, data-driven insights into how these habits correlate with health issues like being underweight or obsessed with eating patterns. This project tackles the need for an interactive and visual analytical tool to support informed dietary decisions.

2.Project Objectives

Analyze food preference data from college students

Decode, clean, and structure the dataset using Python

Design Tableau dashboards to show dietary trends and health risks

Use Tableau Story features for narrative insights

Embed dashboard via Flask for broader access

3.Technologies Used

Python 3.x, pandas, numpy, openpyxl

Tableau Public – for visual dashboards

Flask – for optional dashboard hosting

Excel / Google Sheets

GitHub – version control

WPS Office / Word – documentation

4.Tasks

Week	Task
1	Understand and prepare dataset
2	Python cleaning and decoding
3	Create Tableau dashboard
4	Write insights and build Story
5	Flask deployment
6	Final report and documentation

5. Resources Required

Computers with at least 8 GB RAM
Tableau Public, Python, Flask (optional)
Survey data file + codebook
Internet for GitHub and Tableau Public
Screenshot/recording tools

6. **Risk Analysis**

Risk	Mitigation
Dirty/incomplete data	Python scripts to clean, fill, drop nulls
Tool limitations (Tableau Public)	Use filters and Story to enhance UI
Flask complexity	Optional feature
Time constraints	Weekly structured planning

7.Proposed Solution

Use Python to clean and decode Excel data

Build interactive Tableau dashboards

Provide filters for gender, diet, and health status

Build a Tableau Story to explain results

Host dashboard using Flask locally

8. **Solution Architecture**

Data Layer: Raw Excel + Codebook

Processing: Python (pandas, openpyxl)

Visualization: Tableau filters, dashboards, story

Presentation (Optional): Flask web hosting

Version Control: GitHub repository

✓ 9.Problem-Solution Fit

Problem: Students don't understand how their food choices impact health, and colleges don't have clear insight into this data.
Solution: Dashboards built from real student data offer visual, filterable analysis of diet and behavior, helping institutions and individuals make informed choices.

10.Performance Testing

Environment:

Python 3.x (PyCharm), Tableau Public, Chrome

8GB RAM system, Flask

Key Test Cases:

ID	Description	Result
TC001	Python script runs	✓ Pass
TC002	Tableau dashboard loads	✓ Pass
TC003	Filters respond correctly	✓ Pass
TC004	Story panels navigate smoothly	✓ Pass
TC005	Dashboard exports to PDF	✓ Pass
TC006	Flask app loads (optional)	✓ Pass
TC007	GitHub repo accessible	✓ Pass

Evidence Produced:

Cleaned dataset screenshot

Dashboard filter interaction screenshots

Exported PDF

Flask view screenshot

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11. Conclusion

This project successfully applies data science and visualization to uncover health-related dietary patterns in a college setting. It empowers users with a dashboard that’s interactive, filterable, and supported by clean and accurate backend scripts. With optional web integration, it can scale across institutions.