PROJECT REPORT FORMAT

1. **INTRODUCTION**

1.1 Project Overview

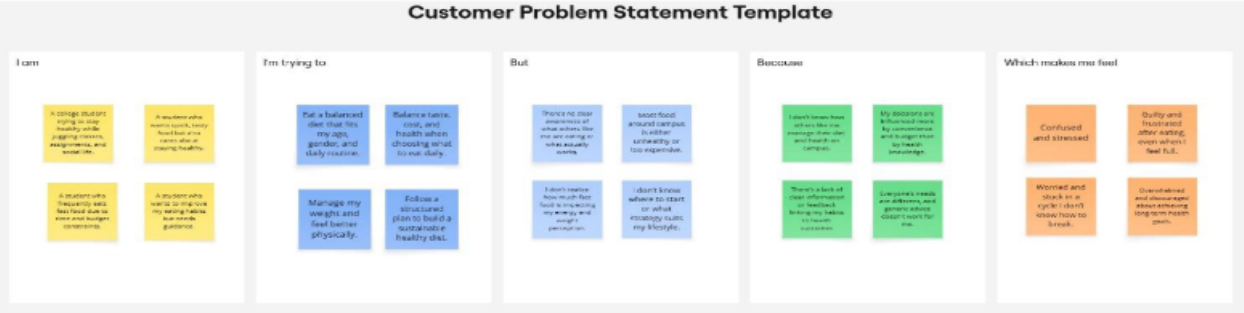
This project focuses on analyzing and improving college students' dietary habits through interactive data visualizations using Tableau. By leveraging a real-world dataset on student food choices, exercise habits, and health perceptions, the project aims to uncover meaningful patterns and provide actionable insights that support healthier lifestyles and better academic outcomes.

1.2 Purpose

The purpose of this project is to utilize Tableau's data visualization capabilities to conduct a comprehensive analysis of college students' dietary behaviors and health perceptions.

2. **IDEATION PHASE**

2.1 Problem Statement

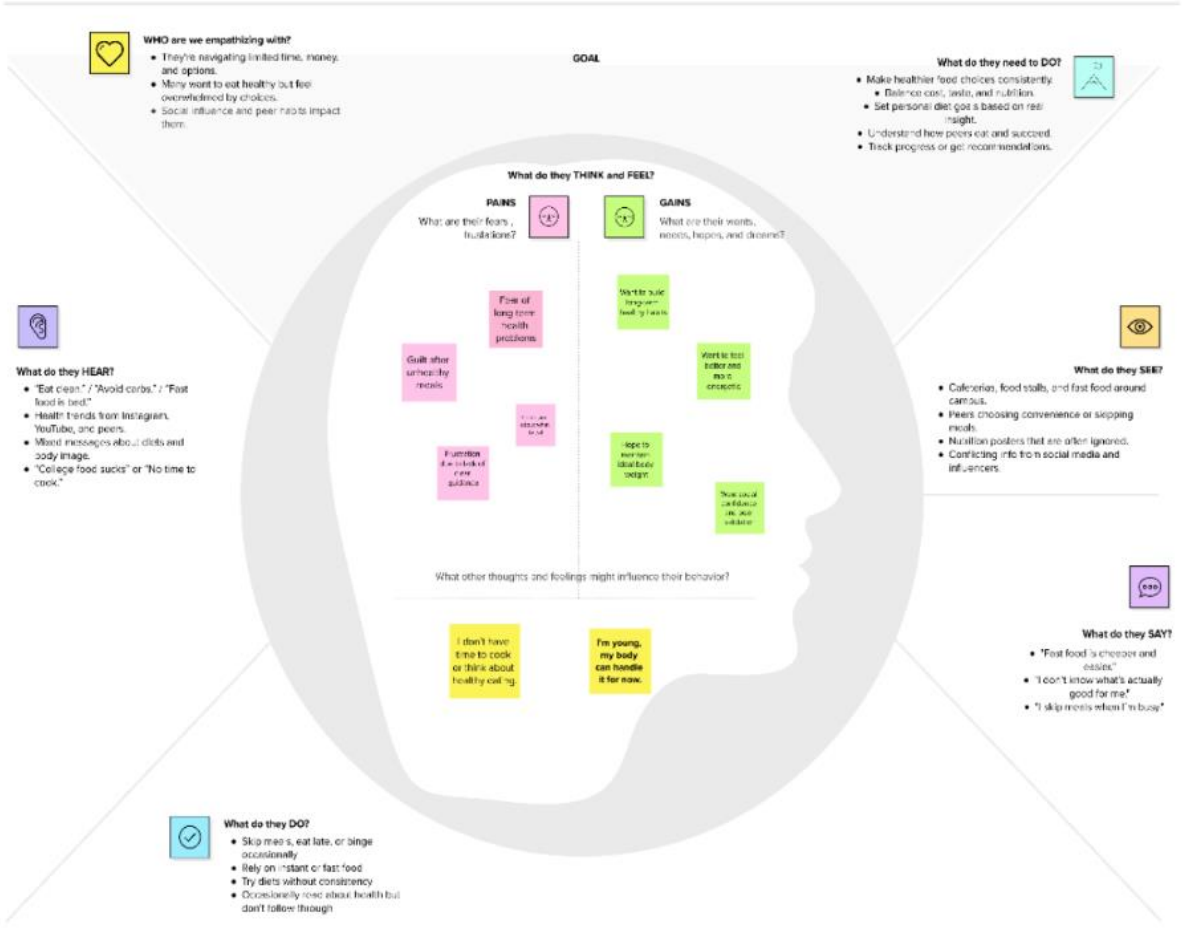


Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1: Diet Awareness Gaps	A college student balancing academics and health	Eat a balanced diet that suits my routine	I don't know how others like me manage their diet and health	There's no clear visibility or shared info on peer habits	Confused and unsure if my choices are right
PS-2: Influenced by Convenience	A student who values taste and budget	Choose meals that are both tasty and healthy	Campus food is often unhealthy or costly	My choices are driven more by convenience than health	Guilty and frustrated after eating
PS-3: Fast Food Reliance	A busy student who eats fast food regularly	Manage my weight and feel better physically	I'm unsure how fast food affects my health	There's a lack of feedback or awareness about the impact	Worried and stuck in a bad cycle
PS-4: Need for Personal Guidance	A motivated student wanting to improve diet.	Follow a healthy, personalized diet plan	I don't know what plan suits my lifestyle	Generic advice doesn't match my individual needs	Overwhelmed and discouraged

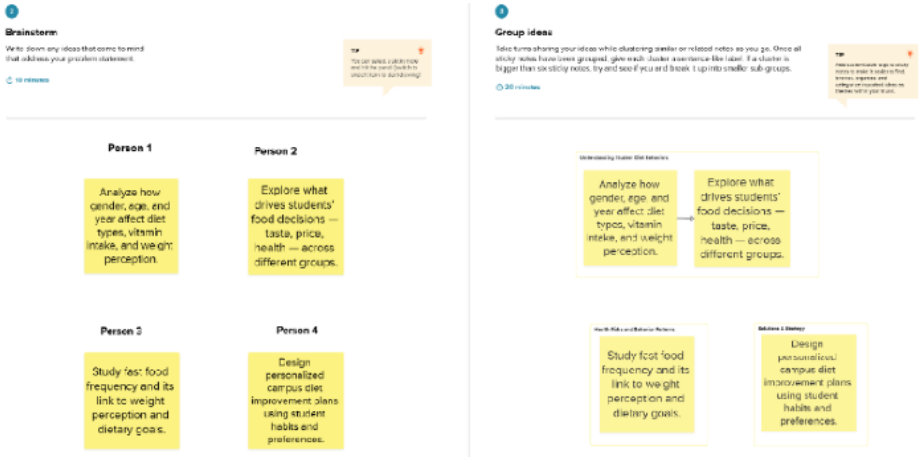
2.2 Empathy Map Canvas

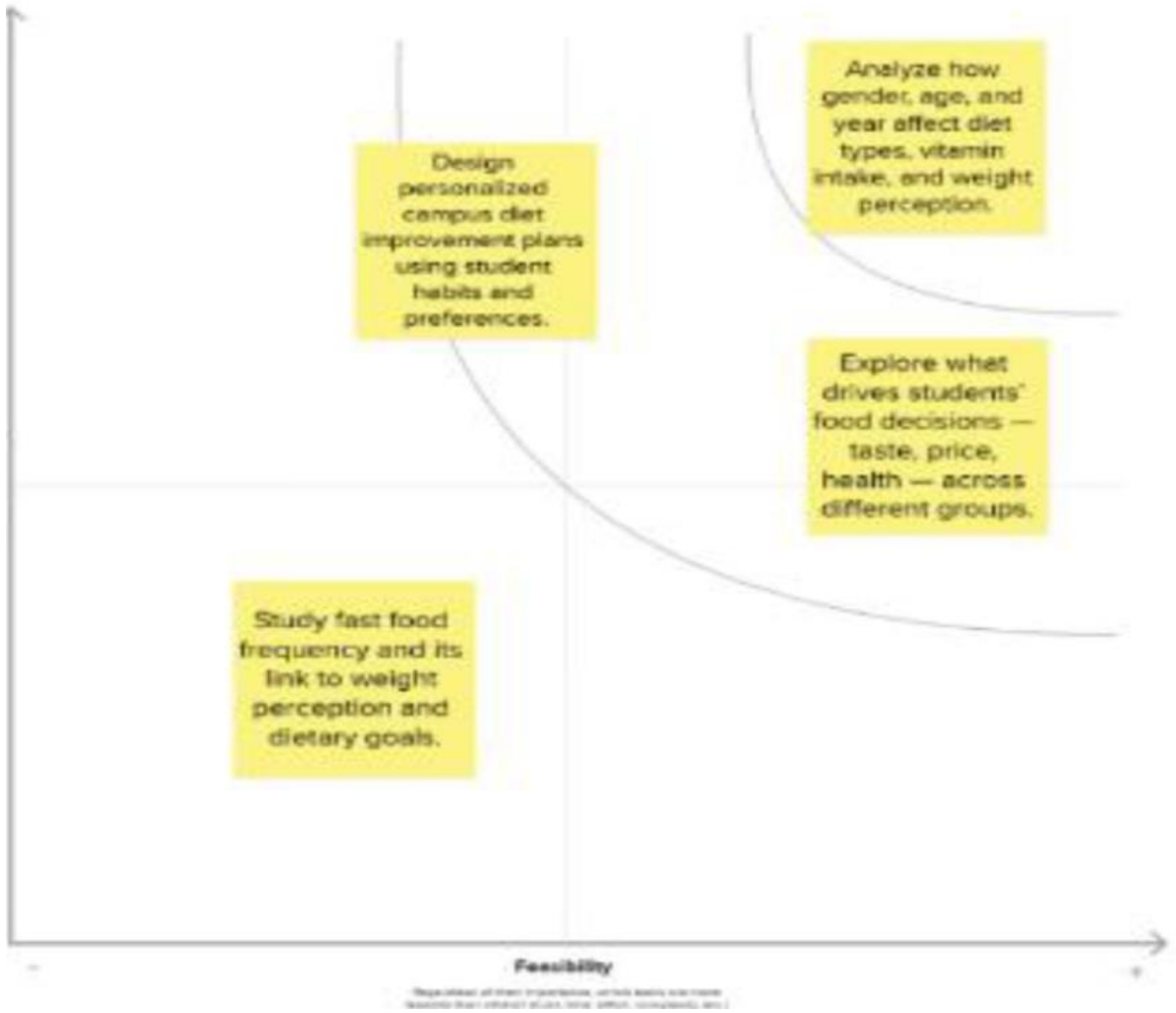
Develop shared understanding and empathy

Summarize the data you have gathered related to the people that are impacted by your work. It will help you generate ideas, prioritize features, or discuss decisions.



2.3 Brainstorming





3. REQUIREMENT ANALYSIS

3.1 Customer Journey map

Stage	Need	Action	Touchpoint	Pain Point	Opportunity
Discover	Wants to understand food habits & diet trends on campus	Collects survey responses, food logs	Google Forms, CSV Files	Data is unstructured and scattered	Centralized Tableau dashboard
Explore	Needs insights on health perception and diet type	Manually explores tables and charts	Excel, Google Sheets	Time-consuming, not insightful enough	Interactive and filterable Tableau visuals
Engage	Wants to compare health status vs food choices	Tries basic pivot tables, charts	Excel, Basic BI Tools	Lacks deep interactivity and correlation	Correlation-ready Tableau dashboards
Decide	Needs to present findings or take action	Screenshots graphs, builds slides	PPTs, PDFs	Lacks compelling storytelling	Use Tableau Story Points for narrative visuals

3.2 Solution Requirement

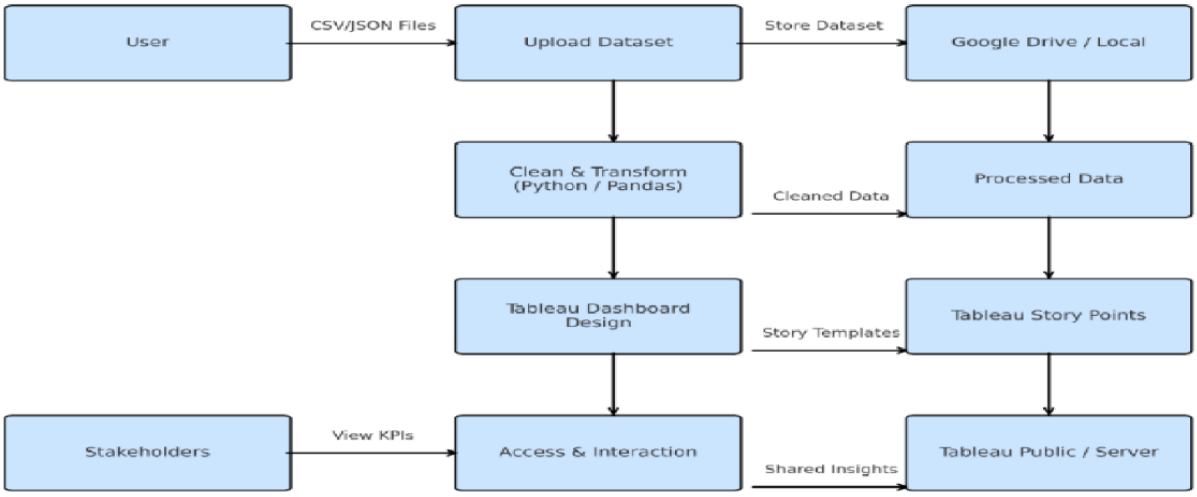
FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Data Upload & Integration	Upload CSV file, Connect Tableau to the dataset
FR-2	Data Cleaning & Preprocessing	Handle missing values, Encode categorical values
FR-3	Dashboard Creation	Create visualizations in Tableau, Add filters & tooltips
FR-4	Insight Presentation	Create story, Add captions and interactive highlights

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	Dashboards are user-friendly and easily understandable for non-technical users.
NFR-2	Security	Data is securely stored and access is restricted to authorized users only.
NFR-3	Reliability	System provides consistent and accurate insights without failure.
NFR-4	Performance	Dashboards load quickly and respond efficiently to user filters/interactions.
NFR-5	Availability	The solution is available 24/7 for users to access and analyze data anytime.
NFR-6	Scalability	Solution can support more datasets or users as the project expands.

3.3 Data Flow Diagram

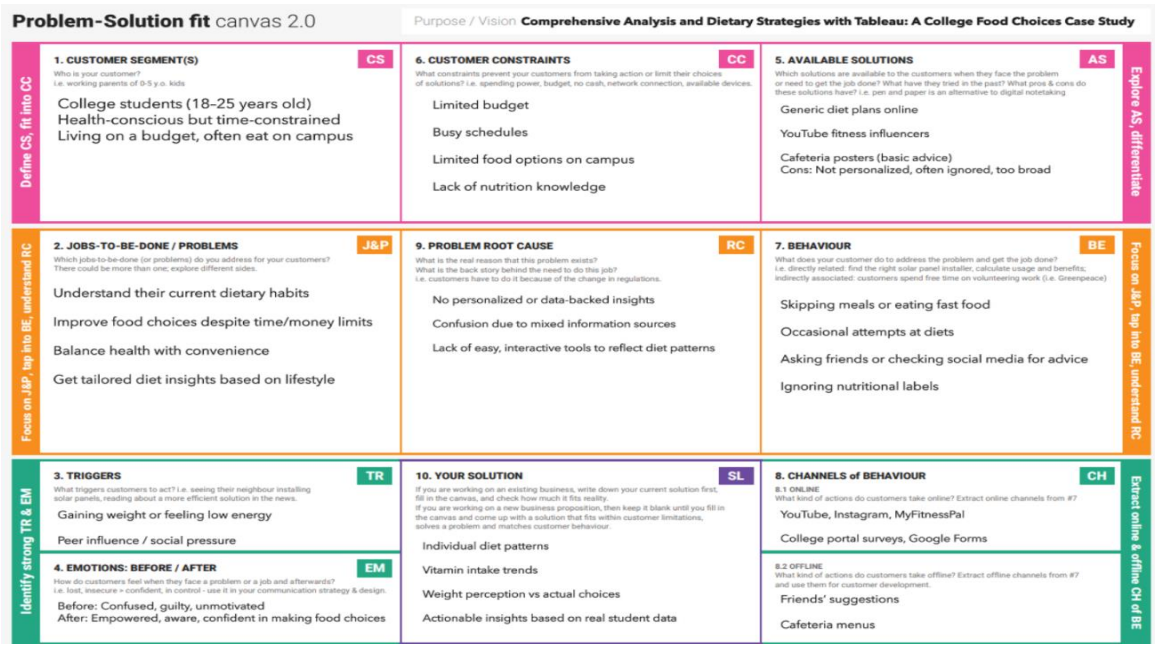


3.4 Technology Stack

Component	Tool/Technology	Purpose
Data Source	CSV file (food_coded.csv)	Raw dataset containing student food preferences and health data
Visualization	Tableau Desktop	Creating interactive dashboards and visual stories
Storage	Google Drive / Local	Store raw, cleaned, and transformed datasets
Collaboration	Google Docs, Slack / WhatsApp	Team collaboration, notes sharing, and documentation
Deployment	Tableau Public / Tableau Online	Sharing dashboards with stakeholders and public access

4. PROJECT DESIGN

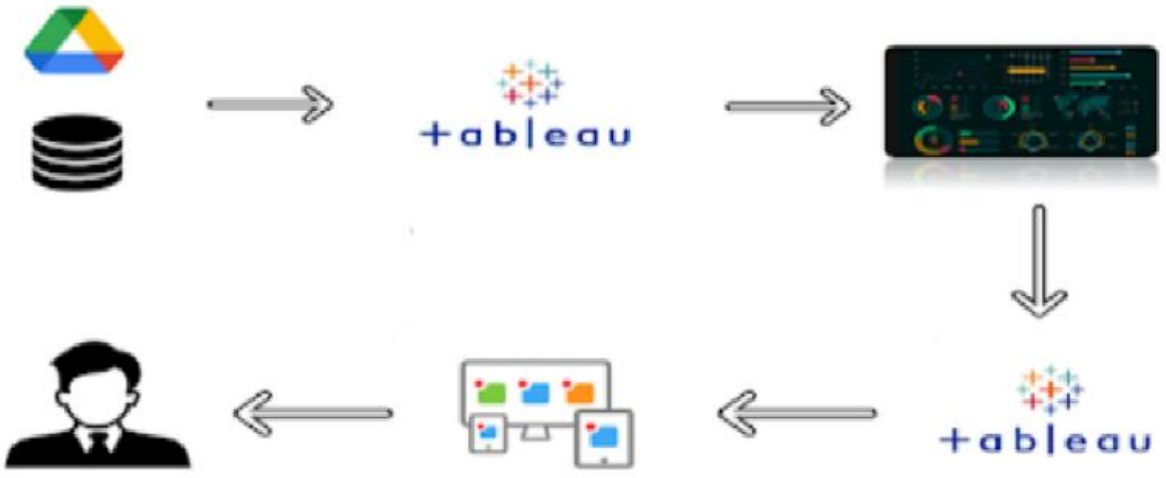
4.1 Problem Solution Fit



4.2 Proposed Solution

S.No.	Parameter	Description
1	**Problem Statement** (Problem to be solved)	College students often make poor dietary decisions due to lack of awareness, time constraints, limited access to personalized health data, and budget issues.
2	**Idea / Solution Description**	Develop an interactive Tableau dashboard using survey data to analyze and visualize students' food habits, diet types, and health perceptions, offering personalized and actionable insights.
3	**Novelty / Uniqueness**	Combines real student behavior data with advanced visualization to give tailored feedback. Goes beyond generic diet advice by using actual user patterns and Tableau analytics.
4	**Social Impact / Customer Satisfaction**	Helps students become more aware of their health, make better dietary decisions, and reduce future health risks. Encourages behavioral change through data transparency.
5	**Business Model** (Revenue Model)	Freemium model: basic dashboard free for students; premium version for institutions with extra analytics, consulting for cafeteria optimization, or licensing.
6	**Scalability of the Solution**	Easily scalable to other colleges and universities using similar survey structures. Can integrate with institutional health apps or meal tracking platforms.

4.3 Solution Architecture



5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Data Collection	USN-2	As a user, I can load data into the processing environment	1	High	ALL
Sprint-2	Data Preprocessing	USN-3	As a user, I can handle missing values in the dataset	3	Medium	ALL
Sprint-2	Data Preprocessing	USN-4	As a user, I can encode or map categorical variables appropriately	2	Medium	ALL
Sprint-3	Making Graphs/Visualizations	USN-5	As a user, I can build the initial model based on processed data	5	High	ALL
SPRINT - 4	Dashboard & STORIES	USN - 6	Dark ui with eye feasted color palette	6	HIGH	ALL
SPRINT - 5	Report & documentation	USN - 7	The step by step guide documentation	7	MEDIUM	ALL

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	1 Day	24 June 2025	24 June 2025	20	24 June 2025
Sprint-2	20	1 Day	25 June 2025	25 June 2025	20	25 June 2025
Sprint-3	20	1 Day	26 June 2025	26 June 2025	20	26 June 2025
Sprint-4	20	1 Day	27 June 2025	27 June 2025	20	27 June 2025
Sprint-5	20	1 Day	28 June 2025	28 June 2025	20	28 June 2025

6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

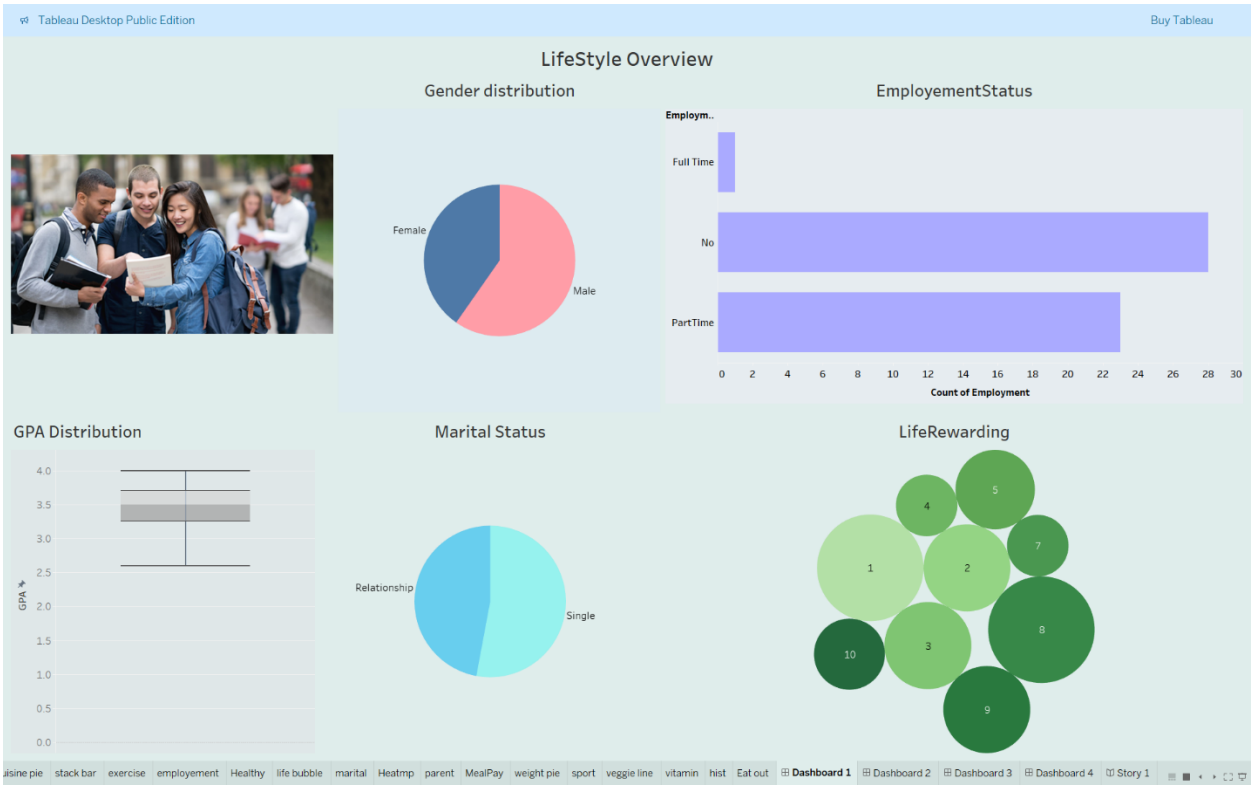
Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No.	Parameter	Screenshot / Values
1.	Data Rendered	Data Rendered from Food coded csv file like Gender , vitamins, Diet coded ,etc.
2.	Data Preprocessing	Removed Duplicates by grouping, split the columns, correcting the data types etc. were done in the Tableau
3.	Utilization of Filters	Tableau Filters used for filtering null values and sum of weight of students to visualize Histogram
4.	Calculation fields Used	Used Calculation fields for weight classification that is -Weight Col
5.	Dashboard design	No of Visualizations / Graphs – 4 dashboards Dashboard 1 – 5 Dashboard 2 – 6 Dashboard 3 – 5 Dashboard 4 – 3
6	Story Design	No of Visualizations / Graphs -4 visualizations for one story

7. RESULTS

7.1 Output Screenshots



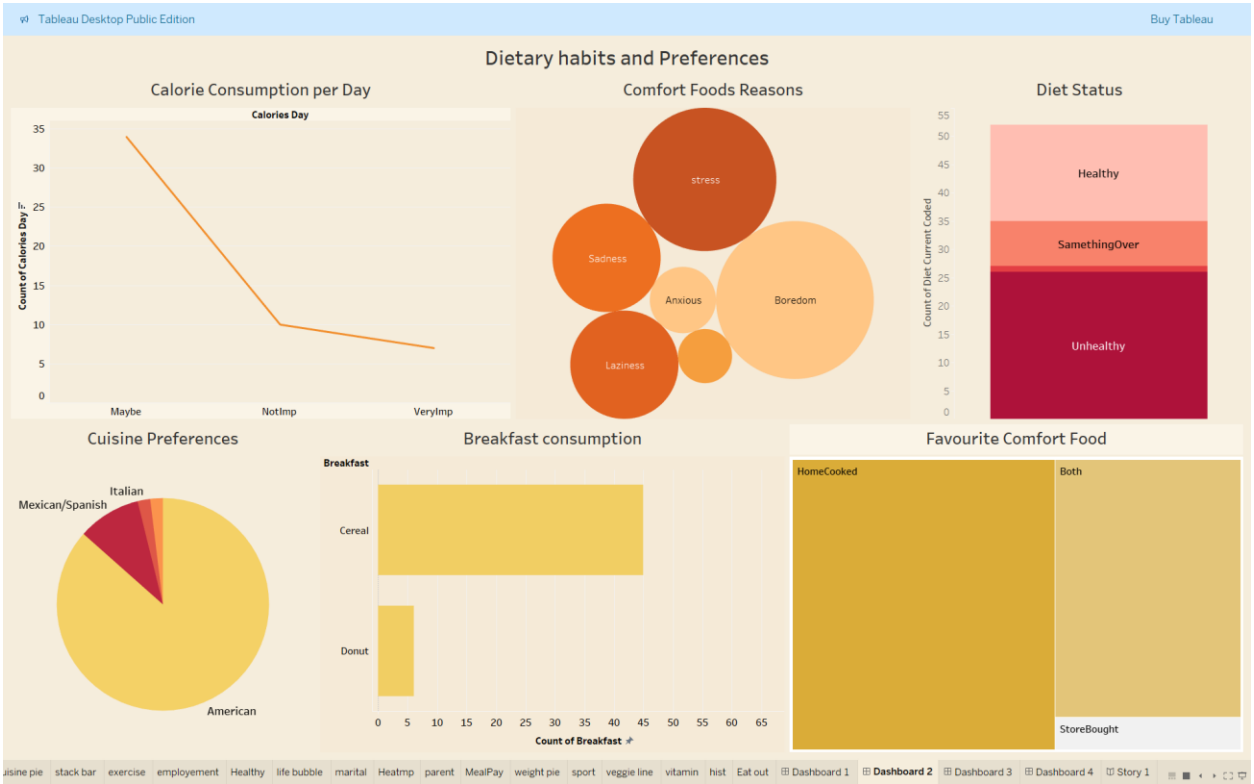


Tableau Desktop Public Edition
Buy Tableau
Health and Nutrition
ExerciseFrequency
Exercise
2-3 times
Everyday
once a week
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32
Count of Exercise
HealthyFeeling
8
4
6
5
9
10
2
7
3
1
VitaminIntake
Gender / Vitamins
Male
Female
Count of Vitamins
No
Yes
No
Yes
VeggieFruitConsumption
Count of Fruit Day
Count of Veggies Day
Veggies Day
Fruit Day
NutritionalCheck
Nutritional Check
CertainProducts
Everything
MostProduct
Never
Very Rarely
isine pie
stack bar
exercise
employement
Healthy
life bubble
marital
Heatmp
parent
MealPay
weight pie
sport
veggie line
vitamin
hist
Eat out
Dashboard 1
Dashboard 2
Dashboard 3
Dashboard 4
Story 1

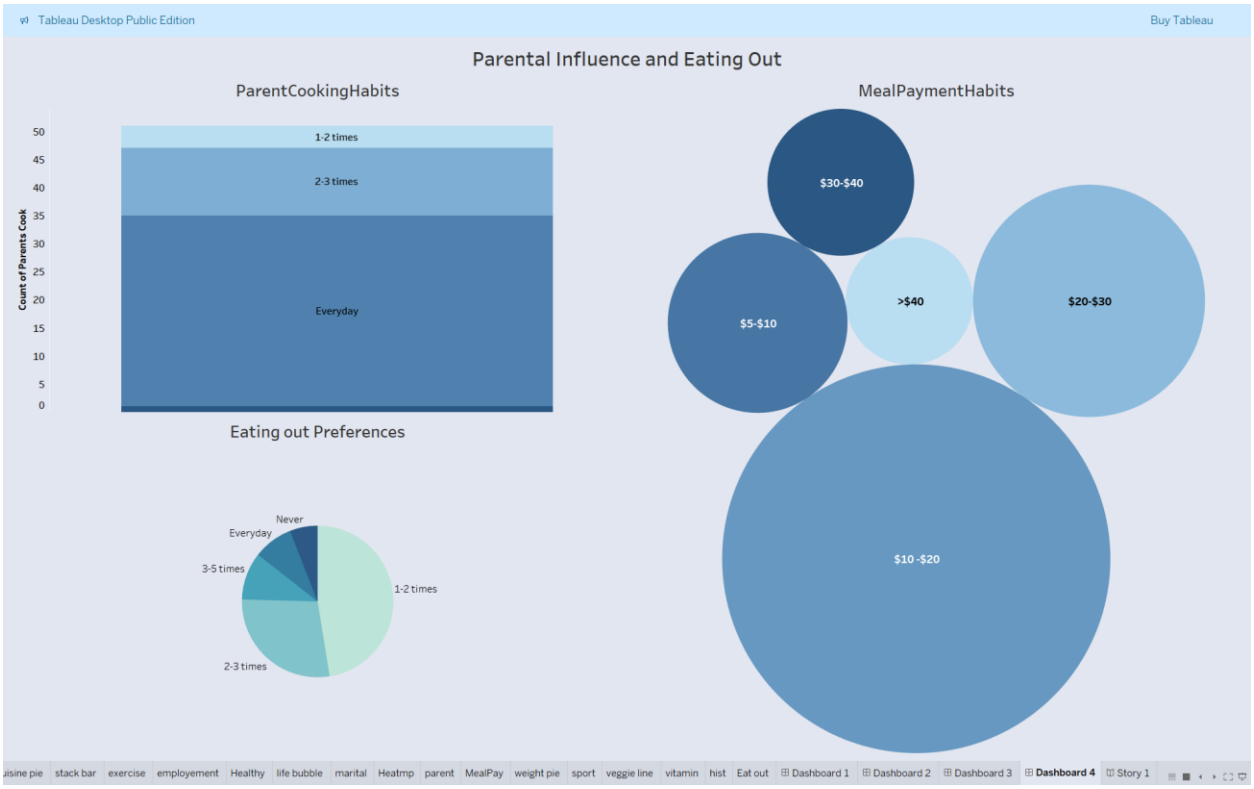
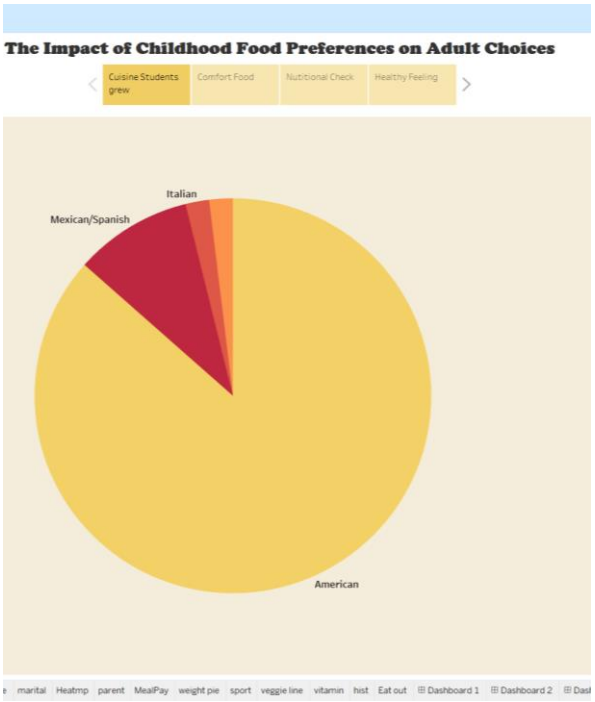


Tableau Desktop Public Edition
Buy Tableau
Parental Influence and Eating Out
ParentCookingHabits
Count of Parents Cook
1-2 times
2-3 times
Everyday
MealPaymentHabits
$30-$40
$5-$10
>$40
$20-$30
$10 -$20
Eating out Preferences
Never
Everyday
3-5 times
1-2 times
2-3 times
isine pie
stack bar
exercise
employement
Healthy
life bubble
marital
Heatmp
parent
MealPay
weight pie
sport
veggie line
vitamin
hist
Eat out
Dashboard 1
Dashboard 2
Dashboard 3
Dashboard 4
Story 1


The Impact of Childhood Food Preferences on Adult Choices
Cuisine Students grew
Comfort Food
Nutitional Check
Healthy Feeling
Italian
Mexican/Spanish
American
marital
Heatmp
parent
MealPay
weight pie
sport
veggie line
vitamin
hist
Eat out
Dashboard 1
Dashboard 2

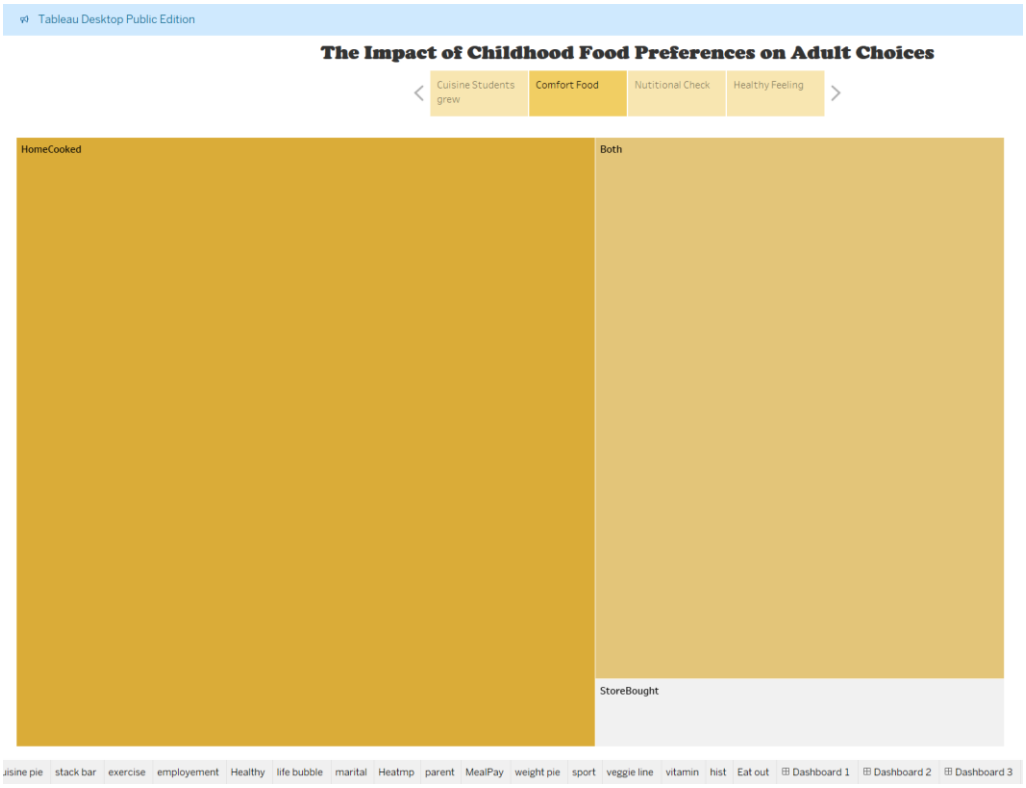
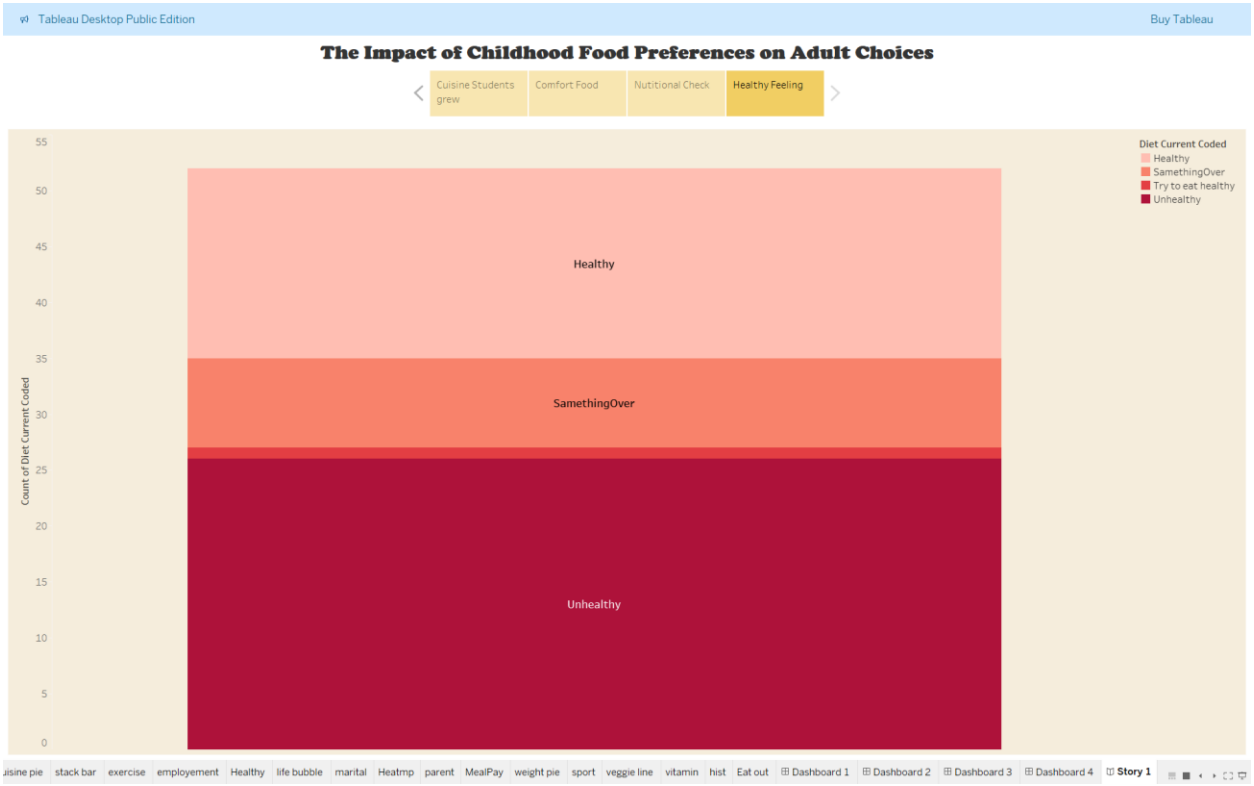


Tableau Desktop Public Edition
The Impact of Childhood Food Preferences on Adult Choices
Cuisine Students grew
Comfort Food
Nutitional Check
Healthy Feeling
HomeCooked
Both
StoreBought
stack bar
exercise
employement
Healthy
life bubble
marital
Heatmp
parent
MealPay
weight pie
sport
veggie line
vitamin
hist
Eat out
Dashboard 1
Dashboard 2
Dashboard 3



8. ADVANTAGES & DISADVANTAGES

Advantages

1. Data-Driven Decision-Making

- Empowers university administrators, nutritionists, and policymakers to make informed decisions based on real student dietary data.

2. Improved Student Health

- Identifies unhealthy eating patterns early, allowing timely interventions that can improve physical and mental well-being.

3. Predictive and Preventive Approach

- Leverages predictive analytics to anticipate health issues before they become widespread, enabling proactive nutrition strategies.

4. User-Friendly Visualizations

- Tableau makes it easy to interpret complex data through interactive dashboards, accessible even to non-technical stakeholders.

5. Customized Nutrition Plans

- Supports the creation of personalized dietary recommendations based on student demographics and behavior.

6. Institutional Resource Optimization

- Helps universities allocate resources effectively (e.g., adjusting cafeteria menus, planning awareness campaigns) based on real needs.

Disadvantages

1. Data Privacy Concerns

- Handling health-related student data may raise privacy and ethical issues; requires strict compliance with data protection regulations.

2. Data Quality and Completeness

- Inaccurate or incomplete self-reported data (e.g., food diaries or surveys) can affect the reliability of insights and predictions.

3. Limited Scope Without Integration

- If not integrated with fitness apps, medical records, or cafeteria systems, insights may be surface-level or miss context.

4. Requires Technical Setup

- Tableau licenses, infrastructure for real-time data collection, and skilled personnel for dashboard creation may pose cost and training challenges

9. CONCLUSION

This project highlights the power of data visualization in promoting healthier lifestyles among students. By using Tableau, institutions can gain valuable insights into dietary habits, enabling timely interventions and fostering a culture of informed, health-conscious decision-making on campus.

10. FUTURE SCOPE

- **Integration with fitness trackers** for real-time health monitoring
- **Mobile dashboard access** for students and staff

- **AI-based personalized diet recommendations**
- **Expansion to multiple campuses or age groups**
- **Longitudinal studies** to track dietary impact over time

11. APPENDIX

Dataset Link :

https://www.kaggle.com/datasets/borapajo/food-choices?select=food_coded.csv

GitHub & Project Demo Link

https://github.com/Heyyaditya/A-College-Food-Choices-Case-Study.git