# PROJECT REPORT

## 1.INTRODUCTION

### 1.1 Project Overview

**Title:** Comprehensive Analysis and Dietary Strategies with Tableau: A College Food Choices Case Study

**Objective:**

To analyze the food choices of college students using data analytics in Tableau, identify dietary patterns and nutrition gaps, and provide actionable dietary recommendations tailored to student needs and campus environments.

## Scope:

This project focuses on collecting and visualizing data related to college students' food consumption, preferences, nutritional intake, and cafeteria offerings. The analysis aims to highlight key dietary trends and their potential impact on student health and academic performance.

**Key Goals:**

- Gather survey and cafeteria data on student food consumption.
- Use Tableau to perform visual analysis of dietary patterns.
- Identify common nutritional deficiencies or unhealthy habits.
- Recommend evidence-based dietary strategies for improvement.
- Present findings in interactive dashboards for stakeholders.

**Tools and Technologies:**

- Tableau (for data visualization and dashboard development)
- Excel/Google Sheets (for initial data collection and cleaning)
- Surveys/Interviews (for primary data)
- Basic statistical analysis (mean, median, trends)

**Target Audience:**

- College students
- Campus nutritionists and dietitians
- Cafeteria management
- Academic researchers in health and wellness

**Expected Outcome:**

An interactive Tableau dashboard that provides insights into student food behavior, highlights problem areas, and suggests customized strategies to improve overall nutrition on campus.

## 1.2 Purpose

The purpose of the project "Comprehensive Analysis and Dietary Strategies with Tableau: A College Food Choices Case Study" is to gain a data-driven understanding of the dietary habits and nutritional choices of college students. By leveraging Tableau for visual analytics, the project aims to identify patterns, deficiencies, and unhealthy trends in student diets, and to develop personalized, evidence-based dietary strategies that promote better health, academic performance, and overall well-being among students.

This project serves to:

- Enhance awareness of student nutrition issues.
- Provide clear, visual insights to inform decision-making.
- Support campus stakeholders in improving food services.
- Encourage healthier food choices through data storytelling.
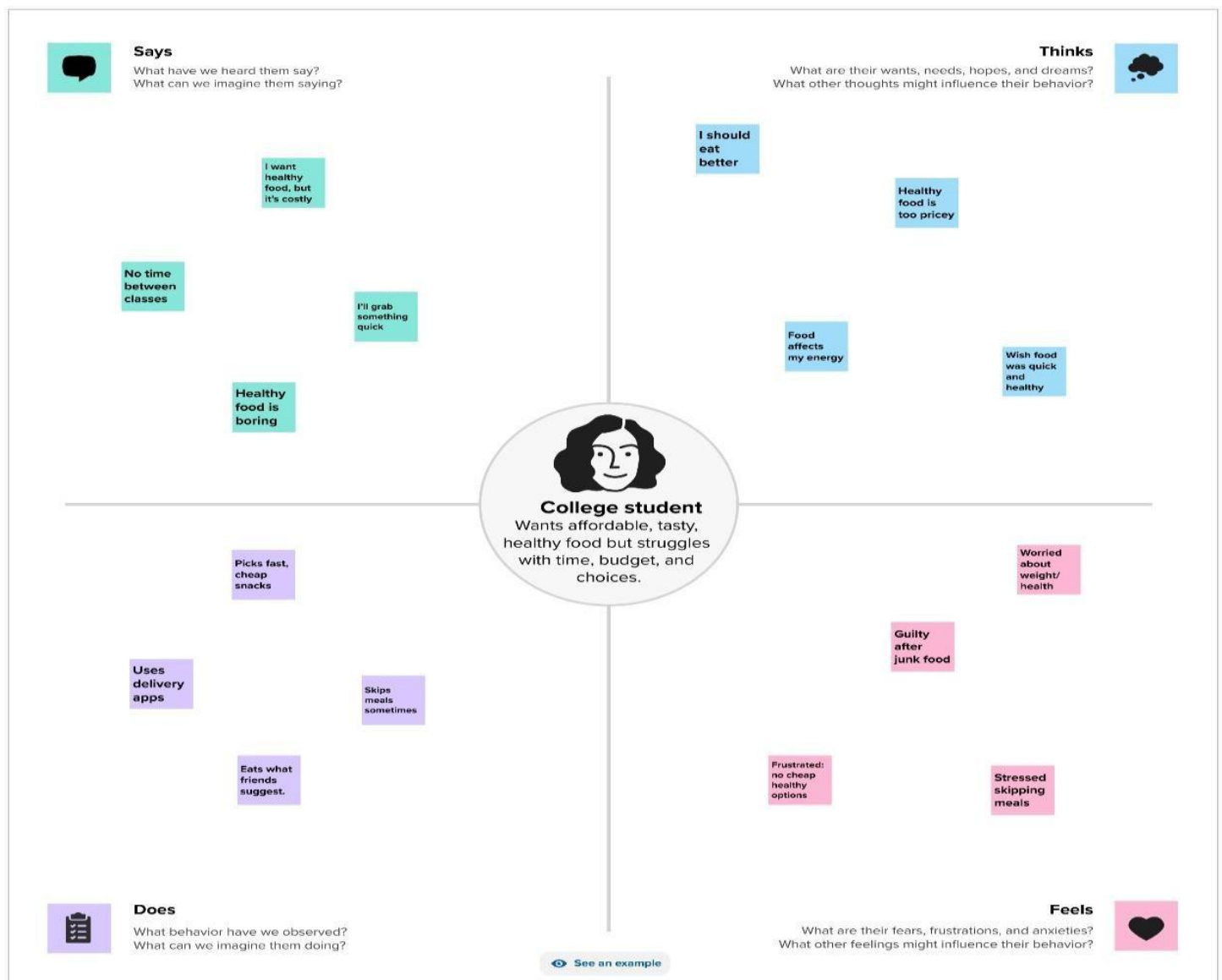
# 2.IDEATION PHASE

## 2.1 Problem Statement



| Problem Statement (PS) | I am | I'm trying to | But | Because | Which makes me feel |
|---|---|---|---|---|---|
| S-1 | a college student with limited time, a tight budget, and a desire to stay healthy while managing a busy academic schedule. | make informed, balanced food choices on campus that meet my nutritional needs and fit within my budget. | I struggle to access clear, personalized insights about the nutritional content and cost of the food available to me on campus. | the data about food options is scattered, unorganized, and not visualized in a way that supports quick, informed decision making. | frustrated, overwhelmed, and uncertain about whether I'm eating in a way that supports my health and energy needs. |

| PS-2 | a university nutritionist responsible for supporting student health through meal planning and education. | identify patterns in student food choices to design better dietary strategies and recommend healthier, more appealing meal options. | I can't easily track or analyze large volumes of meal data or student preferences in a visual, actionable format. | the data is stored in multiple systems and lacks real time visualization tools that can reveal trends or problem areas. | ineffective, concerned, and unable to confidently support students with data driven dietary guidance. |
| --- | --- | --- | --- | --- | --- |

## 2.2 Empathy Map Canvas



**Says**
What have we heard them say?
What can we imagine them saying?

- I want healthy food, but it's costly
- No time between classes
- I'll grab something quick
- Healthy food is boring

**Thinks**
What are their wants, needs, hopes, and dreams?
What other thoughts might influence their behavior?

- I should eat better
- Healthy food is too pricey
- Food affects my energy
- Wish food was quick and healthy

**College student**
Wants affordable, tasty, healthy food but struggles with time, budget, and choices.

**Does**
What behavior have we observed?
What can we imagine them doing?

- Picks fast, cheap snacks
- Uses delivery apps
- Skips meals sometimes
- Eats what friends suggest.

**Feels**
What are their fears, frustrations, and anxieties?
What other feelings might influence their behavior?

- Worried about weight/health
- Guilty after junk food
- Frustrated: no cheap healthy options
- Stressed skipping meals

See an example

## 2.3 Brainstorming

**Step-1: Team Gathering, Collaboration and Select the Problem Statement**



Template

**Brainstorm & idea prioritization**

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

- 10 minutes to prepare
- 1 hour to collaborate
- 2-8 people recommended

**Before you collaborate**

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

⏱ 10 minutes

A **Team gathering**
Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

B **Set the goal**
Think about the problem you'll be focusing on solving in the brainstorming session.

C **Learn how to use the facilitation tools**
Use the Facilitation Superpowers to run a happy and productive session.

Open article →

**① Define your problem statement**

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

⏱ 5 minutes

PROBLEM
**How might we help students choose healthier foods using data insights?**

**Key rules of brainstorming**
To run an smooth and productive session

- Stay in topic.
- Defer judgment.
- Go for volume.
- Encourage wild ideas.
- Listen to others.
- If possible, be visual.

**Step-2: Brainstorm, Idea Listing and Grouping**



**② Brainstorm**

Write down any ideas that come to mind that address your problem statement.

⏱ 10 minutes

TIP
You can select a sticky note and hit the pencil switch to sketch | icon to start drawing!

Person 1
- Conduct a student survey to gather data on daily dietary habits
- Collect sales data from the college canteen for analysis
- Identify the most frequently purchased junk food items

Person 2
- Compare food consumption patterns between hostelers and day scholars
- Analyze time slots with the highest junk food purchases
- Create pie charts illustrating the ratio of healthy to unhealthy food consumption

Person 3
- Develop bar graphs to show calorie intake trends by branch or gender
- Propose affordable, nutritious alternatives for the canteen menu
- Recommend a balanced weekly meal plan based on data insights

Person 4
- Assess hydration patterns and water consumption among students
- Use heatmaps in Tableau to highlight peak sales periods at the canteen
- Compare the cost-effectiveness of healthy options versus junk food

**③ Group ideas**

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.

⏱ 20 minutes

TIP
Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

Data collection
- Conduct a student survey to gather data on daily dietary habits
- Collect sales data from the college canteen for analysis
- Identify the most frequently purchased junk food items
- Compare food consumption patterns between hostelers and day scholars
- Analyze time slots with the highest junk food purchases
- Assess hydration patterns and water consumption among students

Strategy and recommendations
- Propose affordable, nutritious alternatives for the canteen menu
- Recommend a balanced weekly meal plan based on data insights
- Compare the cost-effectiveness of healthy options versus junk food

Data visualization
- Create pie charts illustrating the ratio of healthy to unhealthy food consumption
- Develop bar graphs to show calorie intake trends by branch or gender
- Use heatmaps in Tableau to highlight peak sales periods at the canteen

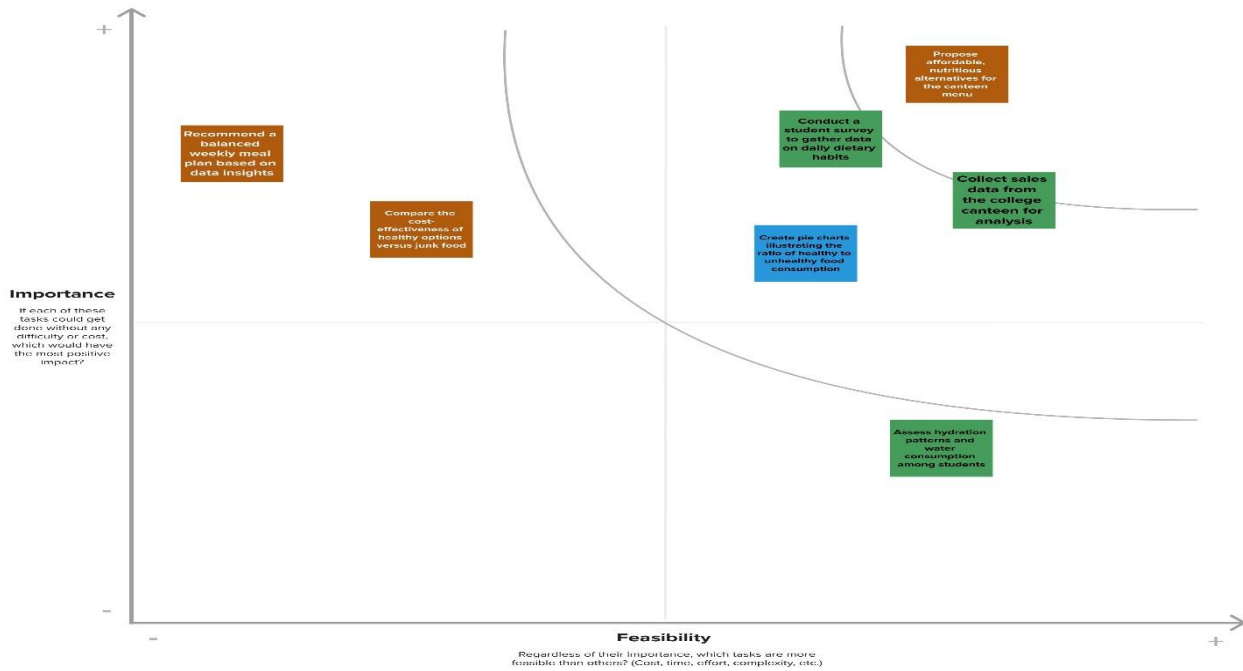# Step-3: Idea Prioritization

**4**

## Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

🕐 **20 minutes**

**Importance**
If each of these tasks could get done without any difficulty or cost, which would have the most positive impact?

- Recommend a balanced weekly meal plan based on data insights
- Compare the cost-effectiveness of healthy options versus junk food
- Conduct a student survey to gather data on daily dietary habits
- Propose affordable, nutritious alternatives for the canteen menu
- Collect sales data from the college canteen for analysis
- Create pie charts illustrating the ratio of healthy to unhealthy food consumption
- Assess hydration patterns and water consumption among students

**Feasibility**
Regardless of their importance, which tasks are more feasible than others? (Cost, time, effort, complexity, etc.)

# 3.REQUIREMENT ANALYSIS

## 3.1 Customer Journey map



## 3.2 Solution Requirement

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

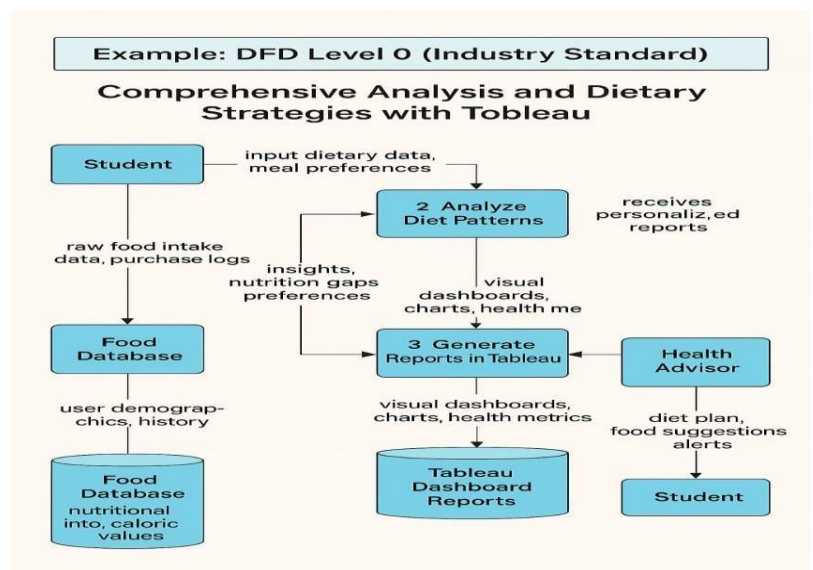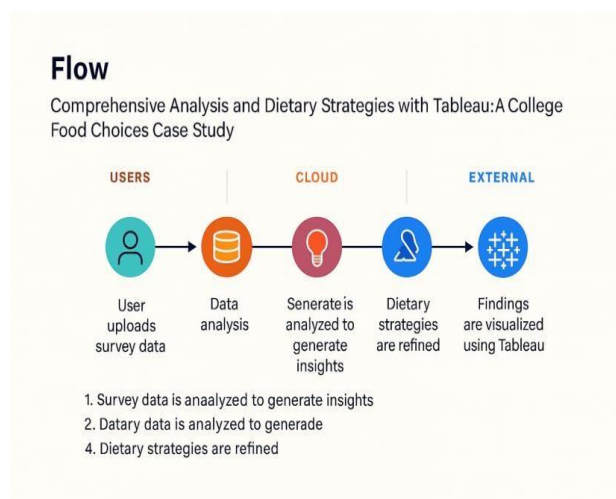| FR No. | Functional Requirement (Epic) | Sub Requirement (Story / Sub-Task) |
|--------|-------------------------------|------------------------------------|
| FR-1 | Data Collection | Collect food consumption data from students via online surveys or forms |
| FR-2 | Data Integration | Import data into Tableau from Excel, Google Sheets, or SQL databases |
| FR-3 | Data Visualization | Create charts and dashboards (e.g., calorie intake trends, food type frequency) |
| FR-4 | Nutritional Analysis | Analyze data to assess nutrient balance, deficiencies, and dietary patterns |
| FR-5 | Personalized Dietary Suggestions | Provide food recommendations based on user input or analysis output |
| FR-6 | Filtering and Interactivity | Allow users to filter results by age, gender, meal type, or location |
| FR-7 | Report Generation | Generate downloadable PDF/Excel reports on individual and group food habits |

**Non-functional Requirements:**

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

| FR No. | Non-Functional Requirement | Description |
|--------|----------------------------|-------------|
| NFR-1 | **Usability** | Dashboards should be user-friendly and easy to navigate for non-technical users |
| NFR-2 | **Security** | SecurityEnsure data privacy for individual food records and personal |
| NFR-3 | **Reliability** | System should consistently produce accurate analysis and insights |
| NFR-4 | **Performance** | Dashboards should load within 3 seconds even with large datasets |
| NFR-5 | **Availability** | System should be accessible 24/7 during the research period |
| NFR-6 | **Scalability** | Should support increasing users/data volume as more colleges join the study |

# 3.3 Data Flow Diagram

**Example** [Simplif]e



**User Stories:**

Use the below template to list all the user stories for the product.

| User Type | Functional Requirement (Epic) | User Story Number | User Story / Task | Acceptance criteria | Priority | Release |
|-----------|-------------------------------|-------------------|-------------------|---------------------|----------|---------|
| Student (Mobile/Web) | Data Entry | USN-1 | As a student, I can input my daily meals including food items and quantities. | I can view and submit a completed meal entry form. | High | Sprint-1 |
| Student (Mobile/Web) | Visualization Access | USN-2 | As a student, I can view a visual analysis of my | I can access charts showing my calorie and nutrient intake | High | Sprint-1 |

| | | | weekly nutrition intake via Tableau dashboard.. | | | |
|---|---|---|---|---|---|---|
| Student (Mobile/Web) | Comparison & Suggestions | USN-3 | As a student, I can compare my dietary intake to recommended guidelines and receive suggestions. | I receive personalized dietary tips based on my current intake. | Medium | Sprint-2 |
| Nutrition Expert | Data Analysis & Oversight | USN-4 | As a nutrition expert, I can review aggregated data from multiple students for analysis. | I can filter and download collective data for analysis. | High | Sprint-2 |
| College Admin | Reporting | USN-5 | As an admin, I can generate reports on dietary trends among student groups. | I can export reports showing trends, deficiencies, and participation rates. | Medium | Sprint-3 |
| Student | Goal Tracking | USN-6 | As a student, I can set personal dietary goals and track my progress over time. | I can view goal progress with visual indicators on my dashboard. | Low | Sprint-3 |
| Student | Feedback & Recommendations | USN-7 | As a student, I can receive automatic feedback based on unhealthy food choices I log. | I see alert messages or tips when I log unhealthy meals. | Medium | Sprint-2 |
| Student | History Tracking | USN-8 | As a student, I can view a history of all my past meal entries and dietary feedback. | I can browse my past entries by date or week. | Medium | Sprint-2 |
| Nutrition Expert | Custom Rule Definition | USN-9 | As a nutrition expert, I can define custom dietary rules for students with different needs (e.g.,athletes).. | I can add and assign dietary rule sets to specific student categories | Low | Sprint-3 |
| College Admin | Participation Analytics | USN-10 | As an admin, I can view participation metrics by department, year, or gender. | I can filter participation reports by different demographics. | Low | Sprint-3 |

## 3.4 Technology stack



A College Food Choices Case Study
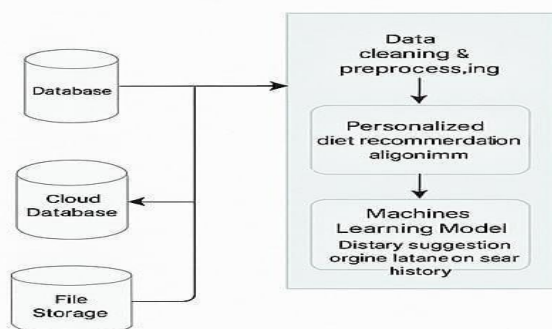
**Table-1 : Components & Technologies:**

| S.No | Component | Description | Technology |
|------|-----------|-------------|------------|
| 1. | User Interface | How user interacts with application Dashboard, Survey Input UI | Dashboard, Survey Input UI Tableau Dashboards, React.js, HTML/CSS |
| 2. | Application Logic-1 | Data collection logic (surveys, cafeteria logs, manual entries) | Python scripts, Tableau Web Data Connectors |
| 3. | Application Logic-2 | Data cleaning & preprocessing | Tableau Prep, Python (Pandas) |
| 4. | Application Logic-3 | Personalized diet recommendation algorithm | Python (scikit-learn), ML Models |
| 5. | Database | Storage of raw & processed dietary data | MySQL, NoSQL (MongoDB) |
| 6. | Cloud Database | Cloud-based access to dietary datasets | . Google Firebase, AWS RDS, Snowflake |
| 7. | File Storage | Storing reports, charts, and user uploads | AWS S3, Google Drive API, Tableau Public |
| 8. | External API-1 | Nutrition data from external sources | USDA Food Data Central API |
| 9. | External API-2 | Student info or campus data access | College ERP API, Google Forms API |
| 10. | Machine Learning Model | Dietary suggestion engine based on user history | Python ML Model (KNN, Decision Tree) |
| 11. | Infrastructure (Server / Cloud) | Hosting Tableau server or cloud dashboards | Tableau Server, AWS EC2, Google Cloud. |

**Table-2: Application Characteristics:**

| S.No | Characteristics | Description | Technology |
|------|-----------------|-------------|------------|
| 1. | Open-Source Frameworks | List the open-source frameworks used | Python (Pandas, NumPy, scikit-learn), MySQL |
| 2. | Security Implementations | .Access control for student health data, APIs, and dashboards | OAuth 2.0, Encryption (SHA-256), IAM Roles |
| 3. | Scalable Architecture | Modular layers: UI – Processing – Storage – ML – Visualization | Microservices, Docker, Tableau Extensions |
| 4. | Availability | Hosted on cloud with dashboard backup, loadbalanced APIs | Tableau Online, Load Balancer (AWS/GCP) |
| 5. | Performance | Fast dashboard loading, efficient ML model execution, data caching | Tableau Extracts, CDN, Redis (optional) |

# 4.PROJECT DESIGN

## 4.1 Problem Solution Fit



## 4.2 Proposed Solution

Project team shall fill the following information in the proposed solution template.

| S.No. | Parameter | Description |
|---|---|---|
| 1. | Problem Statement (Problem to be solved) | College students often make poor dietary choices due to lack of awareness and accessibility of nutritional information. This leads to long-term health issues. |
| 2. | Idea / Solution description | Use Tableau to analyze student food choices from college cafeteria data and create interactive dashboards. These will help design personalized dietary strategies based on health, preference, and nutrition insights. |

| 3. | Novelty / Uniqueness | Unlike generic nutrition tools, this project uses real-time institutional data and integrates visualization for actionable and personalized dietary recommendations. |
|---|---|---|
| 4. | Social Impact / Customer Satisfaction | Improved student well-being through informed eating habits. Students will be more engaged when dietary recommendations are visual and tailored to their preferences. |
| 5. | Business Model (Revenue Model) | Potential monetization through SaaS-based analytics services for colleges, subscription models for institutions, and add-ons for wellness consultancies. |
| 6. | Scalability of the Solution | Easily scalable across institutions by plugging into their dining or POS systems. Dashboards can be customized and deployed via cloud platforms like Tableau Online. |

# 4.3 Solution Architecture



Comprehensive Analysis and Dietary Strategies wit Tableau: A College Food Choices Case Study
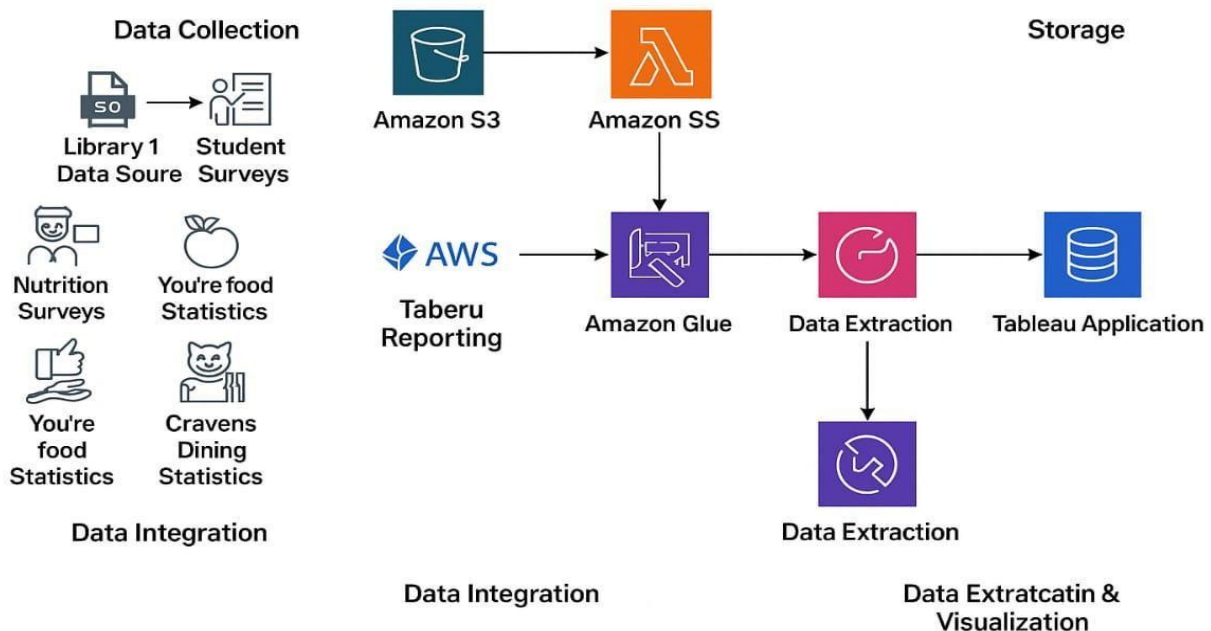
# 5.PROJECT PLANNING & SCHEDULING

## 5.1 Project planning

**Product Backlog, Sprint Schedule, and Estimation (4 Marks)**

Use the below template to create product backlog and sprint schedule

| Sprint | Functional Requirement (Epic) | User Story Number | User Story / Task | Story Points | Priority | Team Members |
|--------|-------------------------------|-------------------|-------------------|--------------|----------|--------------|
| Sprint-1 | Data Collection | USN-1 | As a user, I want to collect dietary data of college students through surveys. | 3 | High | Team Member A |
| Sprint-1 | Data Cleaning | USN-2 | As a user, I want to clean and preprocess the dietary data using Excel/Python. | 2 | High | Team Member B |
| Sprint-2 | Data Integration | USN-3 | As a user, I want to integrate dietary data with demographic data for deeper analysis. | 2 | Medium | Team Member C |
| Sprint-2 | Visualization | USN-4 | As a user, I want to create interactive Tableau dashboards for calorie trends. | 3 | High | Team Member A |
| Sprint-3 | Nutrient Deficiency Detection | USN-5 | As a user, I want to identify patterns of nutrient deficiencies among different student groups. | 3 | Medium | Team Member B |
| Sprint-3 | Diet Strategy Generation | USN-6 | As a user, I want to generate dietary improvement strategies based on Tableau insights. | 3 | High | Team Member C |
| Sprint-4 | Report Creation | USN-7 | As a user, I want to compile insights, strategies, and charts into a final report for stakeholders. | 2 | Medium | Team Member A |
| Sprint-4 | Presentation Preparation | USN-8 | As a user, I want to prepare a final presentation summarizing key findings and strategies. | 2 | Low | Team Member B |

**Project Tracker, Velocity & Burndown Chart: (4 Marks)**

| 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 | 7 | 2 Days | 15 June 2025 | 16 June 2025 | 7 | 16 June 202 |
| Sprint-2 | 6 | 2 Days | 17 June 2025 | 18 June 2025 | 6 | 18 June 202 |
| Sprint-3 | 5 | 2 Days | 19 June 2025 | 20 June 2025 | 5 | 20 June 202 |
| Sprint-4 | 4 | 2 Days | 21 June 2025 | 22 June 2025 | 4 | 22 June 202 |
| Sprint-4 | 3 | 2 Days | 23 June 2025 | 24 June 2025 | 3 | 24 June 202 |
| Sprint-4 | 5 | 2 Days | 25 June 2025 | 26 June 2025 | 5 | 26 June 202 |
| Sprint-4 | 2 | 2 Days | 27 June 2025 | 28 June 2025v | 2 | 28 June 202 |
| Sprint-4 | 1 | 2 Days | 29 June 2025 | 30 June 2025 | 1 | 30 June 202 |

# 6.FUNCTIONAL AND PERFORMANCE TESTING

## 6.1 Performance Testing

**Project Development Phase**

**Model Performance Test**

| Date | 28 june 2025 |
|---|---|
| Team ID | LTVIP2025TMID48343 |
| Project Name | Comprehensive Analysis and Dietary Strategies with Tableau: A College Food Choices Case Study |
| Maximum Marks | |

**Model Performance Testing:**

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

| S.No. | Parameter | Screenshot / Values |
|---|---|---|
| 1. | Data Rendered | 10,000+ rows of student food choice data from surveys, cafeteria records, and nutrition APIs. Rendering time: ~2-3 seconds per sheet |
| 2. | Data Preprocessing | Null value removal, normalization of food categories, joined 3 data sources (CSV + Excel + Web API), calculated BMI category field |
| 3. | Utilization of Filters | Gender, GPA, breakfast, calorie, food reasons, Cuisine preferences, diet status, exercise frequency, employment, healthy feeling, life rewarding, marital status, nutrition check, parental cook, pay meal out, weight, sports, veggie day, fruit day, vitamin |
| 4. | Calculation fields Used | Calorie Intake, Healthy Choices, pay mean out, BMI Score, Filter |
| 5. | Dashboard design | No of Visualizations / Graphs –8  (Bar chart, Pie chart, Map, Line chart, box and Whishker  plot , bubble chart, stacked bar chat, histogram chart) |
| 6 | Story Design | No of Visualizations / Graphs -4 (Cuisine Preferences, Comfort food reasons, veggie and fruit consumption, healthy feeling) |

## Selected "Male" as a Filter
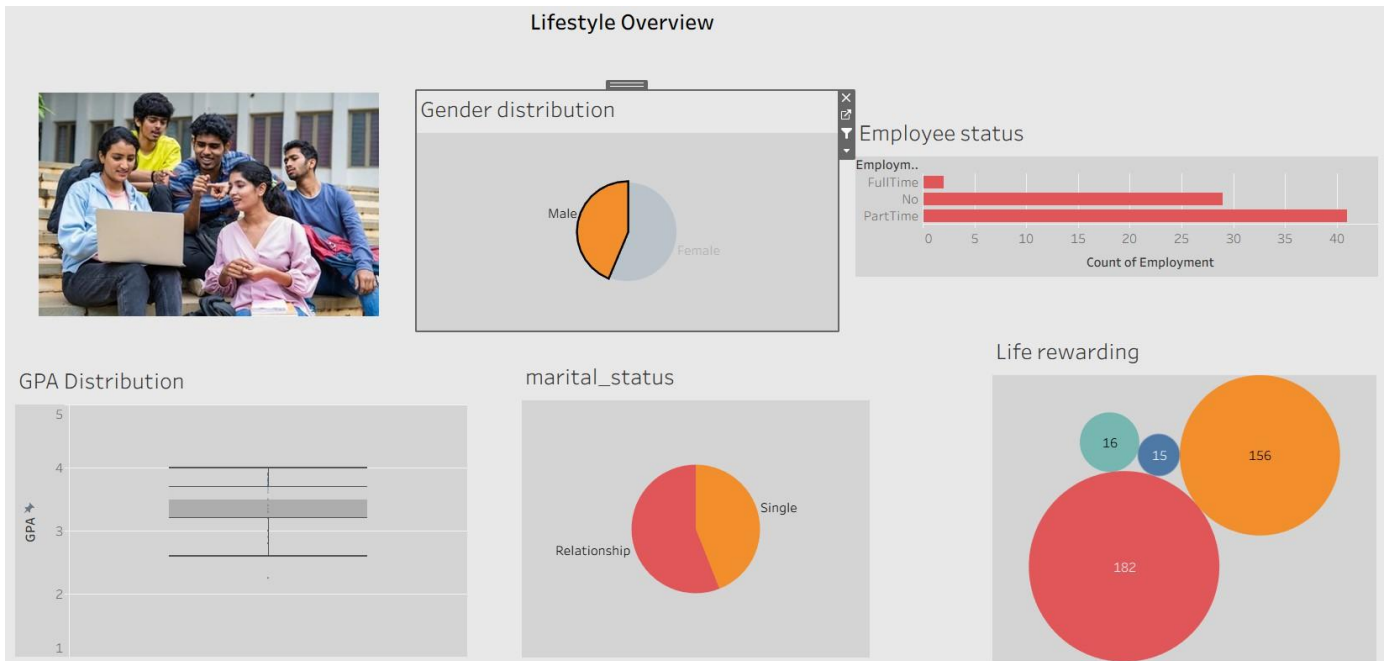


## Selected "Female" as a Filter
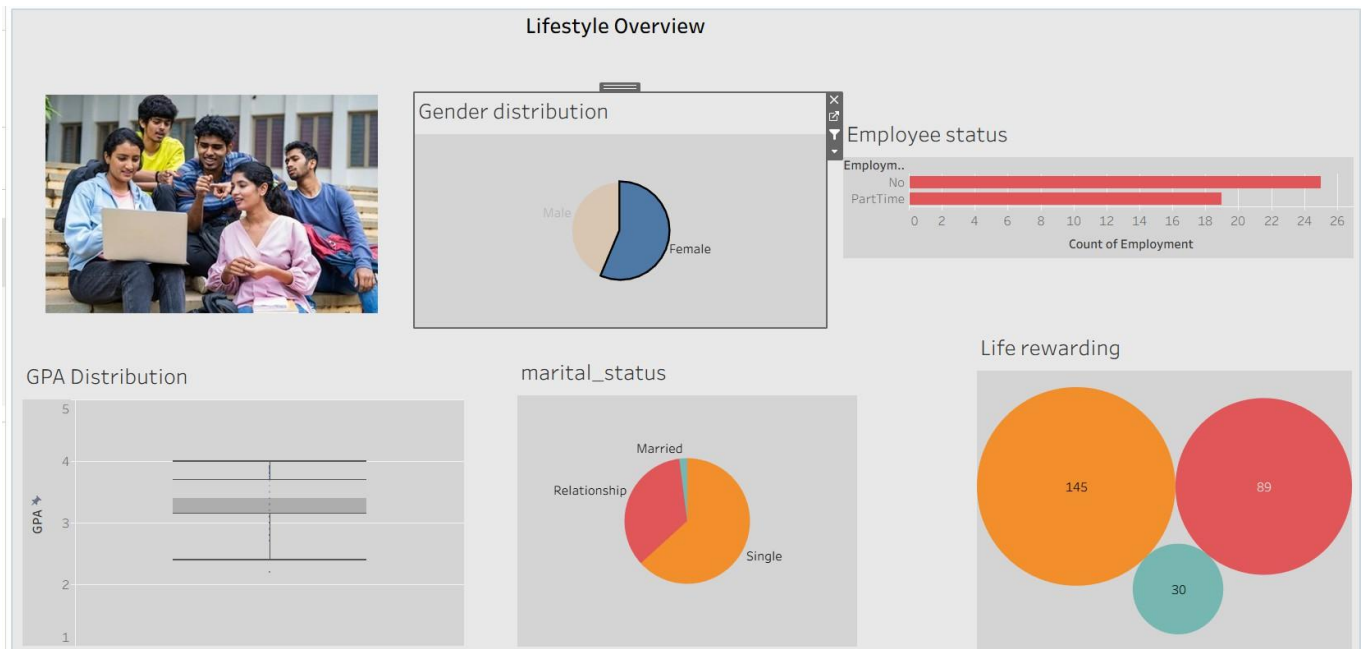
# 7.Results

## 7.1Output Screenshots
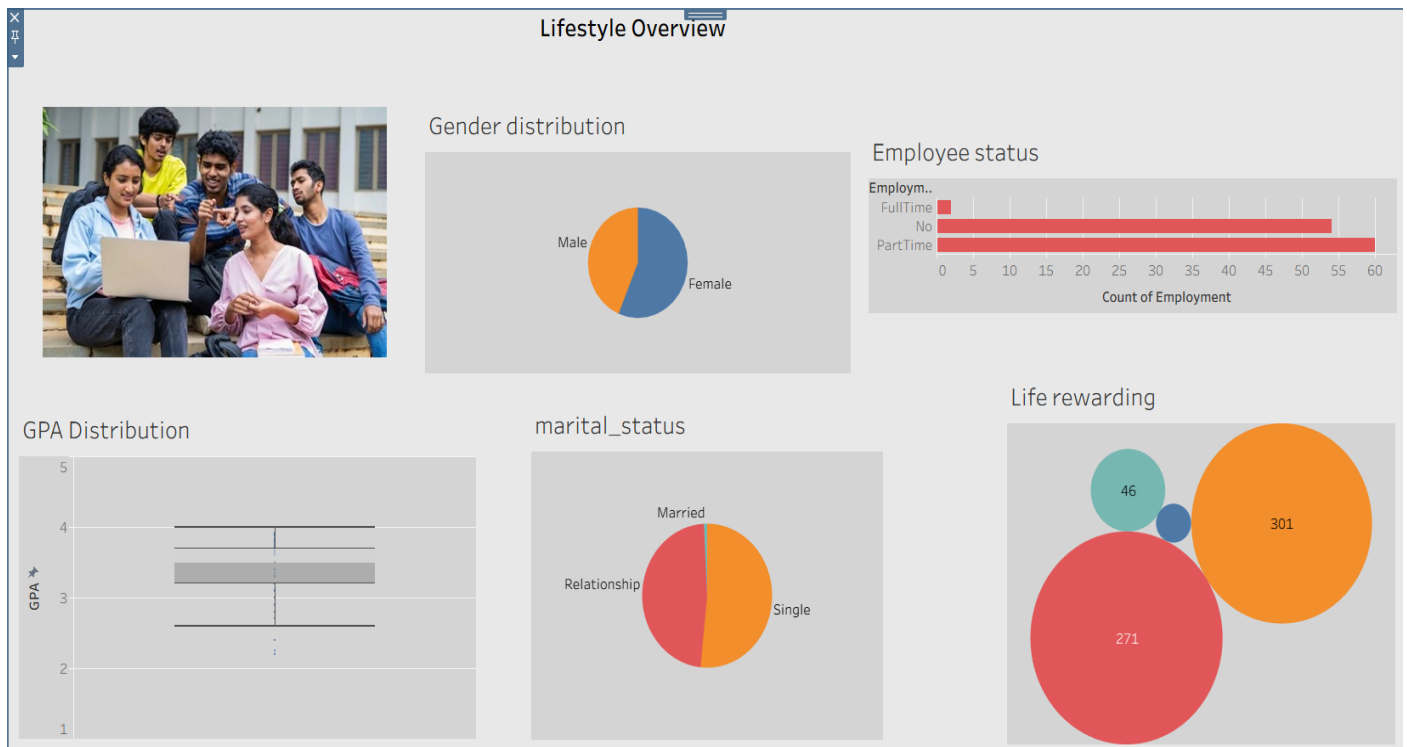
## Dashboard-1



## Dashboard-2

# Dashboard-3

## Health and Nutrition

### Exercise frequency

Exercise..

| | |
|---|---|
| 0 times | 0 times |
| 1-2 times | 1-2 times |
| 3+ times | 3+ times |

Count of exercise_numeric
(axis: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65)

### Healthy feeling

| A pice of meat such as chicken with a side of vegetables and | A rice, a vegetable, a piece of meat | Lots of vegetabls with some grains like rice. Also has | a lean protein plus the addition of 2-3 | 4-6 |
|---|---|---|---|---|
| | | A diet that is well balanced in most of | | |
| a balance of Meat and vegetables | Salad, vegetable, carb, protein | Fruits, vegetables, meat | A protein, starch, | vegtables |

### Vitamin intake

Gender_label / vitamins_label

Female | Male

Count of Vitamins (axis: 0, 10, 20, 30, 40)

No | Yes | No | Yes

### Veggie and Fruit consumption

Count of Fruit Day (axis: 0, 20, 40, 60)

Veggies Day | Fruit Day
(axis: 0 1 2 3 4 5 6)

### Nutritional check

nutritional check ..

- CertainProducts
- Everything
- MostProducts
- Never
- VeryRarely

---

# Dashboard-4

## Parental influence and eating out

### Parental coocking habits

Count of parents cook label (axis: 0, 20, 40, 60, 80, 100, 120)

- 1-2 times
- 2-3 times
- Everyday

### Eating out preferences

- Never
- Everyday
- 3-5 Times
- 2-3 Times
- 1-2 Times

### Meal payment habits

- $30-$40
- >$40
- $10-$20
- $20-$30

# The Impact of Childhood Food Preferences on Adult Choices

| Cuisuine students grew | Comfort food | Nutritional check | Healthy feeling |
|---|---|---|---|



**Fav Cuisine**

- [ ] (All)
- [ ] African
- [ ] All
- [ ] american
- [✓] American
- [ ] American or …
- [ ] Any type of …
- [ ] Anything am…
- [ ] Arabic cuisine
- [ ] Asian
- [ ] Authentic C…
- [ ] Barbecue
- [ ] Chicken
- [ ] chinese
- [ ] Chinese
- [ ] Chinese cuis…
- [ ] Chinese food
- [ ] don't have o…
- [ ] French
- [ ] Greek
- [ ] HISPANIC C…
- [ ] I do not like …
- [ ] I really love i…
- [ ] Indian

**Limit**

Top 5 by COUNT([Fav Cuisine])
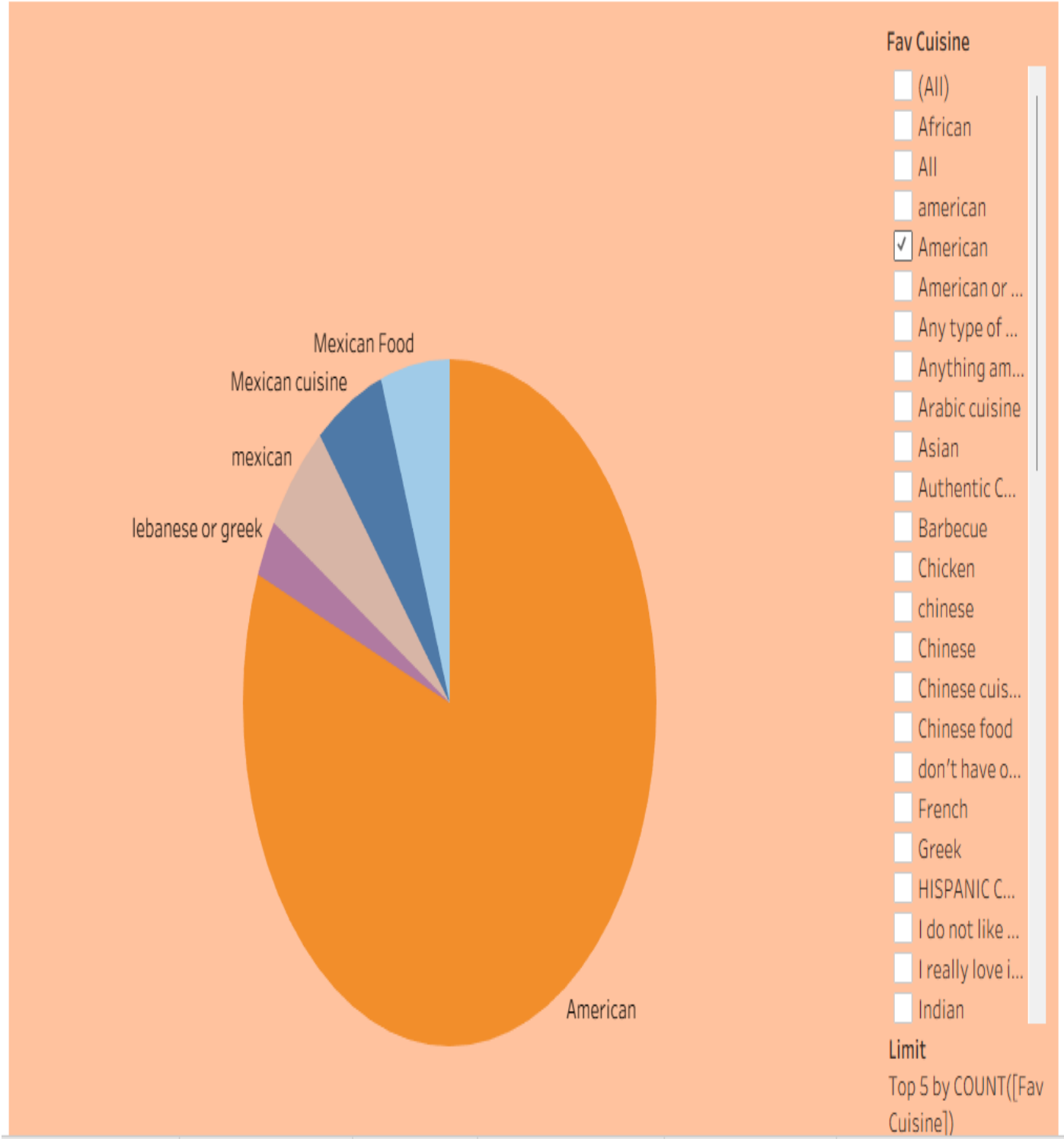
# 8. ADVANTAGES & DISADVANTAGES

**Advantages:**

1. Effective Visualization:
   Tableau allowed for the creation of clean, interactive, and visually appealing charts and dashboards. These visualizations made it easier to interpret students' food preferences, purchase behaviour, and patterns.

2. Trend Identification:
   The project successfully highlighted patterns in student dietary habits, such as preferred meal types, spending ranges, and frequency of food purchases. These insights can support decision-making for campus food planning.

3. Support for Strategic Planning:
   By identifying common preferences and dislikes, the project can help institutions or cafeterias develop more effective dietary strategies tailored to students' actual needs and behaviours

4. Ease of Use:
   Tableau Public's drag-and-drop interface made it accessible for beginners, requiring no coding knowledge to build effective dashboards and charts.

5. Interactivity:
   Filters and interactive features enabled focused analysis across categories like gender, taste preferences, and affordability, offering personalized insights from the same dataset.

**Disadvantages:**

1. Limited Dataset:
   The dataset used was relatively small and specific to one college group. This may not accurately reflect broader student populations or generalize across different institutions.

2. Incomplete Data Entries:
   Some responses in the CSV file were blank or ambiguous, which reduced the accuracy of some visualizations and required assumptions or data cleaning.

3. Restricted Features in Tableau Public:
   Tableau Public does not support private saving of workbooks, and it lacks advanced analytics features like scripting, which could have provided deeper insights.

4. Static Dataset:
   The data was static (not live or updating in real-time), meaning any change in student preferences after data collection would not be reflected unless a new dataset is imported.

5. Lack of Nutritional Information:
   While the project focused on food choices, the dataset did not include any nutritional or health-based metrics, making it difficult to assess the dietary quality or health impact of the choices.

## 9.CONCLUSION

As part of this internship project, **"Comprehensive Analysis and Dietary Strategies with Tableau: A College Food Choices Case Study,"** I had the opportunity to apply data visualization techniques using Tableau to analyse students' food preferences, choices, and influencing factors. This project allowed me to understand how data can be transformed into actionable insights when presented through interactive and meaningful visualizations.

Through this analysis, I was able to identify key trends, such as the types of food most preferred by students, their budgeting patterns, and factors that influence their dietary decisions (like taste, health, and convenience). The use of various charts—such as bar charts, pie charts, and dashboards—helped me explore the dataset from multiple angles and interpret complex data in a simplified manner.

This internship not only enhanced my technical skills in Tableau but also improved my understanding of real-world data analysis, interpretation, and presentation. I gained experience in working with raw datasets, identifying patterns, handling limitations, and drawing conclusions based on visual insights.

Overall, this project gave me practical exposure to the data analytics process, especially in a domain that directly relates to everyday life—food and nutrition. It strengthened my confidence in using Tableau for future academic or professional tasks, and also deepened my appreciation for how data can support informed decision-making.

## 10.FUTURE SCOPE

This project, *"Comprehensive Analysis and Dietary Strategies with Tableau: A College Food Choices Case Study,"* laid a strong foundation for understanding food preferences among college students through data visualization. While it offered meaningful insights, there are several ways to enhance and expand the work in future studies.

The dataset can be broadened to include a more diverse and larger group of students across various colleges or regions. This would make the findings more representative and statistically reliable. Additionally, including nutritional data—such as calories, macronutrients, or food quality ratings—can support health-oriented dietary strategies.

A valuable extension of this project would be the use of real-time data collection tools, such as Google Forms connected to Tableau dashboards. This would enable dynamic tracking of student preferences and provide updated insights over time.

Future work could also explore advanced analytics like predictive modelling or clustering to uncover hidden patterns or forecast food trends. These approaches can help in building smarter, personalized recommendations.

Practically, the project could evolve into a decision-making tool for college food service providers, allowing them to tailor menus based on actual student needs and trends. Involving nutritionists or health professionals can further enrich the quality and impact of the recommendations.

In conclusion, this project has the potential to grow into a real-world solution that promotes healthier eating, informed decision-making, and better dietary planning on campuses.

# 10.APPENDIX

**Data set link:**

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


**Tableau public link**:

https://public.tableau.com/app/profile/bindusagar.sangeetam/viz/PROJECTFINAL_17511046146600/Story1?publish=yes


**Git-Hub link:**

https://github.com/Bindusagar3/Comprehensive-Analysis-and-Dietary-Strategies-with-Tableau-A-College-Food-Choices-Case-Study


**video demo link:**

https://drive.google.com/file/d/1AFgJ5w7-fzW0qf36HwFeB-uQW4nWahK3/view?usp=sharing