2025 INTERNSHIP REPORT

Submitted to : Smart Internz ,Smart Bridge company

Track : Data Analytics with Tableau

Submitted by:

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From:SeshadriRao Gudlavalleru Engineering College, Gudlavalleru

1. INTRODUCTION

1.1 Project Overview

Project Title:

Comprehensive analysis and dietary strategies with tableau : A college food choices case study

Project Summary:

The project "comprehensive analysis and dietary strategies with tableau" examines the food choices and lifestyle habits of 500 college students using visual analytics.By exploring factors like breakfast comsumptions,calorie intake,beverage preferences,physical activity,and GPA,the study reveals meaningful patterns in student behaviour.

Objectives:

- Analyze dietary patterns:Examine the food choices of college students
- Identify health trends:Understand students nutritional behaviors and lifestyle factors like exercise,vitamin intake and fruit/vegetable consumption.
- Visualize data effectively:Use tableau dashboards to create clear,interactive visualizations that reveal trends and patterns in the data.

Scope:

In-Scope:

- Data cleaning and collection:Focus on student dietary data including food preferences,GPA,gender,and health habits.
- Visualization using tableau.
- Analysis of key variables:Explore correlations between nutrition,and lifestyle habits.
- Gender based comparison: Identify dietary and health differences between male and female student.

Out-of-Scope:

- Real-time data integration
- The project does not provide medical or nutritional prescriptions.

Timeline:

- **Week 1–2:** Data collection and preprocessing
- **Week 3–4:** Exploratory data analysis and initial dashboard development
- **Week 5:** Insights generation and final dashboard enhancements
- **Week 6:** Report preparation and presentation

Key Stakeholders:

- **Project Sponsor:** Smart Bridge Company
- **Project Manager:** Indra Prakash sir

- **Data Analyst / Visualization Developer:**

- Team Leader : Mamidisetti Joshna Devi
- Team member : Kumbham Manoj Kumar
- Team member : Kowthavarapu Kesav
- Team member : Kotha V R S Sai Gowtham

End Users: College students,college administration and health departments and data visualization

Tools & Technologies:

- Tableau for data visualization
- Excel/SQL/Python for data preprocessing (optional)
- Retail sales and placement datasets

Risks and Dependencies:

- **Risk:** Incomplete or inconsistent placement data
- **Mitigation:** Work with stakeholders to define placement tags clearly
- **Dependency:** Timely access to historical sales and product layout data

1.2 Purpose:

The purpose of this project is to analyze and visualize the dietary habits , health behaviors , and academic performance of college students using tableau. By uncovering patterns in food choices , calorie consumption,and lifestyle activities , The project aims to provide actionable insights that promote healthier living and improved academic outcomes. It empowers student , educators and campus health authorities with data driven strategies to foster nutrional awareness , support well being , and design effective wellness programs within educational institutio

2.IDEATION PHASE:

2.1ProblemStatement:

Example:

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
Ps-1: nutrition and wellness officer at a college campus	A nutrition and wellness officer responsible for improving students dietary habits and wellness through data driven interventions	Understand students dietary patterns and identify unhealthy consumption trends among different student groups	The data collected is unstructured, scattered across surveys and meal records,and lacks real time visualization and correlation	Our current tools do not offer consolidated dashboards or interactive visual analytics to correlate dietary behavior with academic performance and health metrics	Frustrated and ineffective ,as I cannot provide timely insights or recommended targeted dietary strategies for student wellness
PS-2 Data analyst at a college health department	A data analyst tasked with supporting the health department by analyzing dietary behavior of students	Identify hoe dietary choices (like breakfast consumption,calorie intake and nutritional habits)affect students performance and well being	I cant link health outcomes to food habits due to disconnected sources and lack of integrated data visualization tools	We lack a unified platform like tableau that connects meal data,health feedback,and academic performance to derive actionable insights	Ovetrained,and constrained,as I cannot deliver comprehensive analysis or support preventive health initiatives effectively

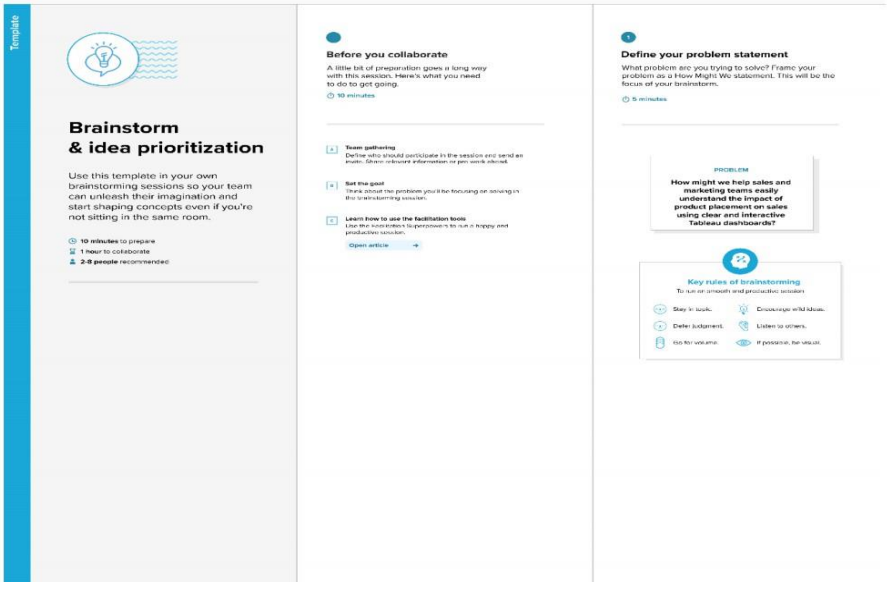
2.2Empathy Map Canvas:

Example:

SAYS	THINKS
. I need to know which foods are most preferred by Students . We must track dietary trends across different Student Groups . Are students skipping meals or eating unhealthy preference options.	. Can this dashboard help us plan better menus? . How can I use this to reduce food waste and overproduction? . Can we align food offerings with student And dietary needs?
DOES	**FEELS**
. Reviews tableau dashboards regularly for meal Consumption Insights . Conducts surveys or feedback collection on food Quality and satisfaction .Compare intake date before and after dietary satisfaction intervention	. Frustrated by inconsistent or vague data . Curious about behavioral patterns behind choices . Confident when data aligns with student satisfaction

2.3Brainstorming:

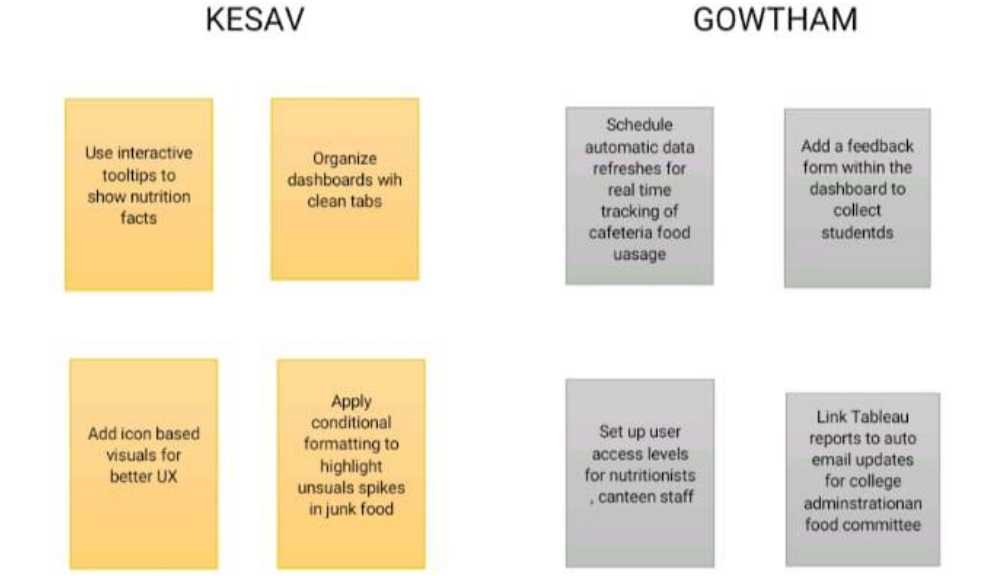
Step-1: Team Gathering, Collaboration and Select the Problem Statement



Step-2: Brainstorm, Idea Listing and Grouping

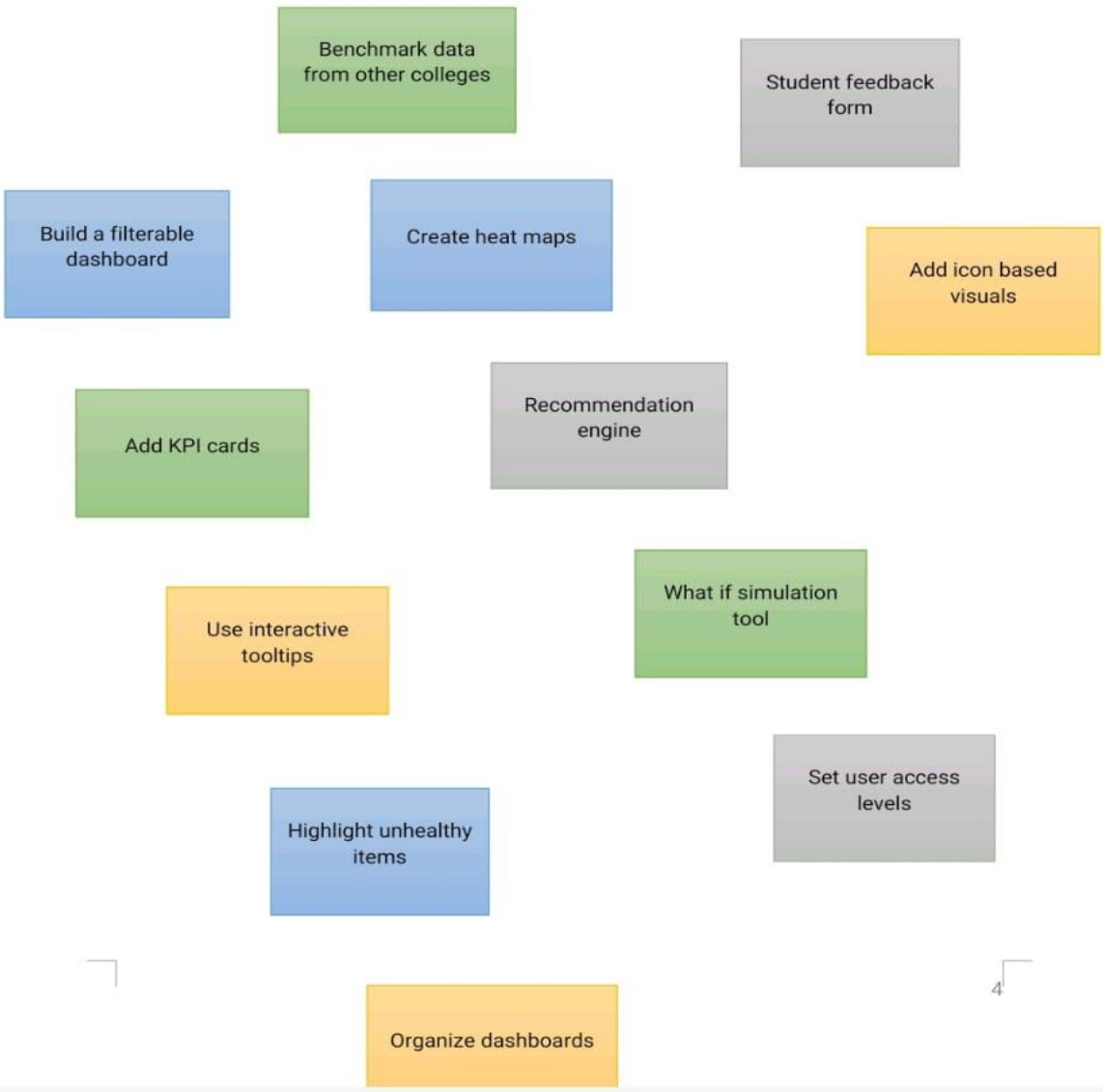
Brainstorm

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



Step 3: Idea prioritization

Your Team should all be on same page about Whats important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.



3.REQUIREMENT ANALYSIS :

3.1Customer Journey Map :

Scenario:	**Entice** How does someone become aware of this service?	Enter What do people experience as they can begin the process?	**Engage** In the core moments in the process,what happens/	**Exit** What do people typically experience as the process finishes?	**Extend** What happens after the experiences is over?
Interactions What interactions do they have at each step along the way? ▪ People: who do they see or talk to? ▪ Places:Where are they? ▪ Things:What digital touchpoints or physical objects do they used?	Social media posts about healthy eating habits in Email campaigns with food awareness	Students visits the food dashboards link via QR code or website Signs in or accesses as a guest user	Compare food options and nutrition state Explores meal suggestions based on preferences	Closes the dashboard after reviewing Downloads recommend meal plan	Follows social media for updates or health tips Gets invited to workshops or food awareness sessions
Goals and motivations At each step,what is a persons primary goal or motivation?	Discover useful resources for healthy eating Intrest in improving health or lifestyle	Understand what the dashboard offers Ease of access to personalized insights	Explore nutrition data Needs to eat healthier on a	Complete the exploration Felling informed or satisfied with the experience	Stay connected for future updates Ongoing desire to eat better
Positive moments What steps does a typical person find enjoyable,productive,fun,motivating,or exacting?	Sees a creative and eye catching poster on campus	Smooth and quick access to the dashboard	Interacts easily with filters and visualizations	Feels accomplished after exploring the data	Receives a helpful follow up email
Negative moments What steps does a typical person find frustrating,confusing,angering,costly,or time consuming?	Misses the promotional material or ignores it	Confused by the login or access process	Gets overwhelmed with too many charts or filters	Forgets to save or download insights	Does not receive timely follow up
Areas of opportunity How might we make each step better?what have others suggested?	Create more relatable and engaging	Simplify access process with single click entry or QR login	Offer tailored recommendation(AI based diet suggestions)	Offer a summary screen of insights learned	Add subscription option for healthy meal tips

3.2Solution Requirement:

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	Dashboards must be user friendly with clear visualization easy navigation and intuitive filters
NFR-2	Security	Implement secure access to data with role based permissions and data encryption
NFR-3	Reliability	Ensure reliable data updates and consistent access to accurate ,real time insights
NFR-4	Performance	Visualizations must load within 5 seconds and respond efficiently to filter changes
NFR-5	Availability	Dashboards should be accessible 24/7 with less than 1%monthly downtime
NFR-6	Scalability	System must scale to accommodate increasing student data without affecting performance

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Data gathering	Collect data on student demographics,food choices,nutrition intake,and preferences from surveys or institutional sorces
FR-2	Data cleaning and preparation	Remove duplicates handle missing or inconsistent values,categorize dietary patterns, and normalize data for analysis
FR-3	visualization	Create insight visualization in tableau such as: Calorie intake vs gender/age Food preferences by mealtype Nutrition intake vs physical activity Dietary habits vs gpa Vitamin consumption vs food categories
FR-4	Dash board development	Develop interactive tableau dash board for visual exploration,filtering,and comparison of dietary trends and strategies

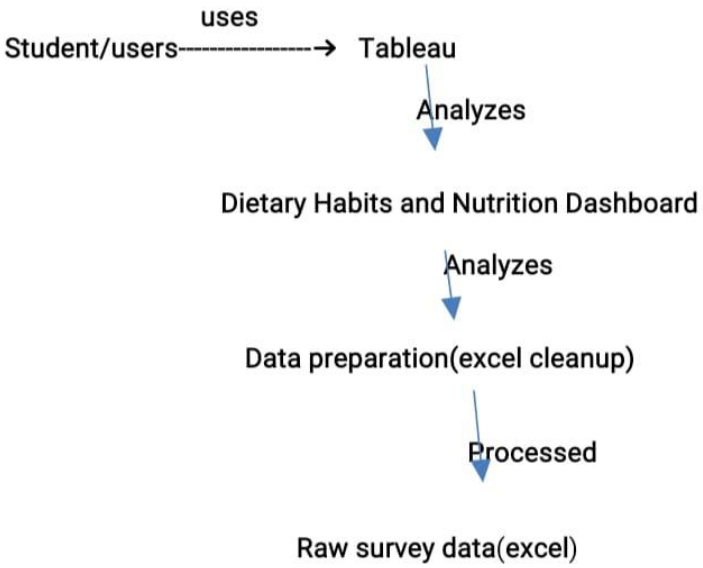
3.3Data Flow Diagram:

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	Interactive Dashboard	USN-1	. As a student ,I want to explore my food consumption insights and compare with peers.	Dashboard filters based on gender,age,BMI,dietary type,and gives personalized suggestions.	High	Sprint-1
Nutrition Analyst	Health Metrics	USN-2	As a nutritionist,I want to track nutrition gaps and dietary trends	KPI cards display stats like calorie intake,fruit/veg servings ,protein/fiber deficiency	High	Sprint-1
College Admin	Student Wellness Overview	USN-3	As an admin,I wanta summary of students dietary wellness for policy making.	Overview of food trends and alerts for unhealthy behaviour spikes across student groups	Medium	Sprint-1
Data Engineer	Data preparation and ETL	USN-4	As a data engineer ,I want to clean and load survey data into tableau property.	Data cleaned, categorized and loaded into tableau prep,ensuring visualization are accurate	HIgh	Sprint-1
Public Health Officer	Dietary Insights Snapshot	USN-5	As an officer ,I want a high level snapshot of student nutrition for campaigns	Auto generated insights on top nutrition risk and improvement trends visible on dashboards	Medium	Sprint-2
Analyst	Scenario Simulation Tool	USN-6	As an analyst ,I want to simulate dietary behavior changes and measure impact	Allows hypothetical input like increase breakfast intake to simulate BMI or nutrition score change	Low	Sprint-2

Example:



3.4Technology Stack:

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table2

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	Data source	Raw data collected from food surveys,meal logs,and student feedback	Excel/CSV/google sheets
2.	Data preparation	Cleans,transforms,and loads data into tableau	Tableau prep/Python/SQL
3.	Data storage	Centralized storage for processed data	Google drive/Microsoft one drive/local storage
4.	Data visualization tool	Creates dashboards and visual analytics	Tableau desktop
5.	User interface	Web or embedded view where users interact with dashboard	Tableau public
6.	Access control	Manages user roles and access levels	Tableau server
7.	Report sharing	Mechanism to export and distribute insights	Tableau sheet
8.	Feedback collection	Collects feedback from users about the dashboards	Google forms

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Usability	Easy to use dashboard with filters,tooltips,and clean layout	Tableau UX/UI design best practices
2.	Performance	Fast data loading and interaction with filters	Tableau extracts (TDE/Hyper),optimized SQL.
3.	Security	Role based access and secure data handling	Tableau permissions/HTTPS
4.	Scalability	Can handle growth in food choice data anf future college surveys	Tableau public (baseic)or cloud hosting
5.	Availability	Dashboard accessible 24/7 with minimal downtime	Tableau connectors/APIs

PROJECT DESIGN:

4.1 Problem solution fit:

Template:

Section	Project details
Target group	College students and campus food service administrators
Problem behaviors	Poor dietary choices,lack of nutritional awareness,unbalanced meals,dissatisfaction with food services
Existing alternatives	Generic menu apps,printed nutrition posters,limited feedback mechanisms
Trigger events	Health concerns,parential influence,peer comparision,fitness goals
Key activities	Real time food tracking visual dietary reports,feedback
	submissions,recommended generation
Key solutions/features	Tableau powered dashboard ,personalized nutrition insights,data driven food planning,AI enhanced meal suggestions
User benefits	Healthier eating habits,improved student wellness,institutional food service improvement
Emotional outcomes	Feeling empowered about food choices,more trust in campus services,reduced anxiety over nutrition

4.2Proposed Solution:

Proposed Solution Template:

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

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Inefficient product placement decisions due to fragmented data and lack of visual, actionable analytics, hindering sales optimization and strategic planning.
2.	Idea / Solution description	An **Integrated Retail Analytics Platform** providing centralized data, interactive visualizations, and comparative insights for optimizing product placement and sales.
3.	Novelty / Uniqueness	Unifies siloed data (sales, placement, promotions) into a single, user-friendly analytical view offering actionable, near real-time insights.
4.	Social Impact / Customer Satisfaction	Empowers users with data-driven confidence for better decisions, leading to increased sales, improved ROI, and enhanced operational efficiency.
5.	Business Model (Revenue Model)	**SaaS subscription model** with tiered pricing based on usage, data volume, and features.
6.	Scalability of the Solution	**Cloud-native architecture** ensuring scalability for data, users, and geographic expansion, with a modular design for future feature enhancements.

4.3Solution Architecture

Example - Solution Architecture

Architecture layer	Components
Data sources	Cafeteria POS,nutrition DBs,surveys
Data ingestion	ETL tools,cloud data lake
Data processing	Spark,SQL DW,ML Models
Visualization	Tableau
Access layer	API gatrway
End users	Admins,students,nutritionists

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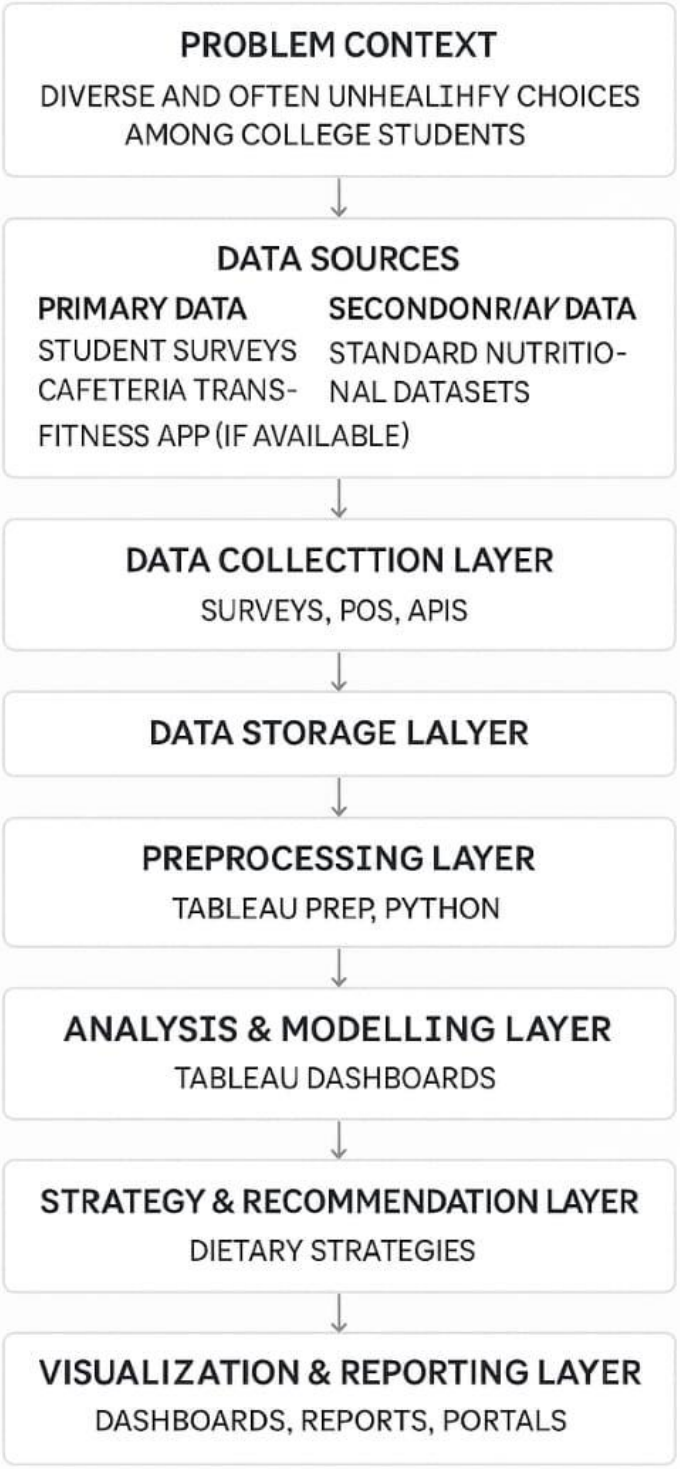
COMPREHENSIV'ANALYSIS AND DIETARY STRATEGIES WITH TABLEAU: A COLLEGE FOOD CHOICES CASE STUDY



5.PROJECT PLANNING & SCHEDULING:

5.1Project 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 and extraction	USN-1	Collect food consumption data	3	High	Joshna
Sprint-1	Data understanding	USN-2	Understand and clean data	2	Medium	Joshna
Sprint-1	Tool setup	USN-3	Connect dataset to tableau	2	Medium	Joshna
Sprint-2	Data preparation	USN-1	Format and transform data for analysis	3	High	Gowtham
Sprint-3	Visualization design	USN-1	Create unique dietary visualization	3	High	Gowtham
Sprint-3	Dashboard creation	USN-1	Build Tableau dashboard	3	HIgh	Manoj
Sprint-4	Insights and storytelling	USN-1	Create compelling food insights story	2	Medium	Kesav
Sprint-4	Performance review	USN_1	Testing dashboard performance	2	Medium	Kesav

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	6 Days	16 june 2025	22 june2025	7	22 june 2025
Sprint-2	3	6 Days	18 june 2025	24 june 2025	3	24 june 2025
Sprint-3	6	6 Days	20 june 2025	26 june 2025	6	26 june 2025
Sprint-4	4	6 Days	21 june 2025	27 june 2025	4	27 june 2025

Velocity:

Velocity=Total story points completed/number of sprints

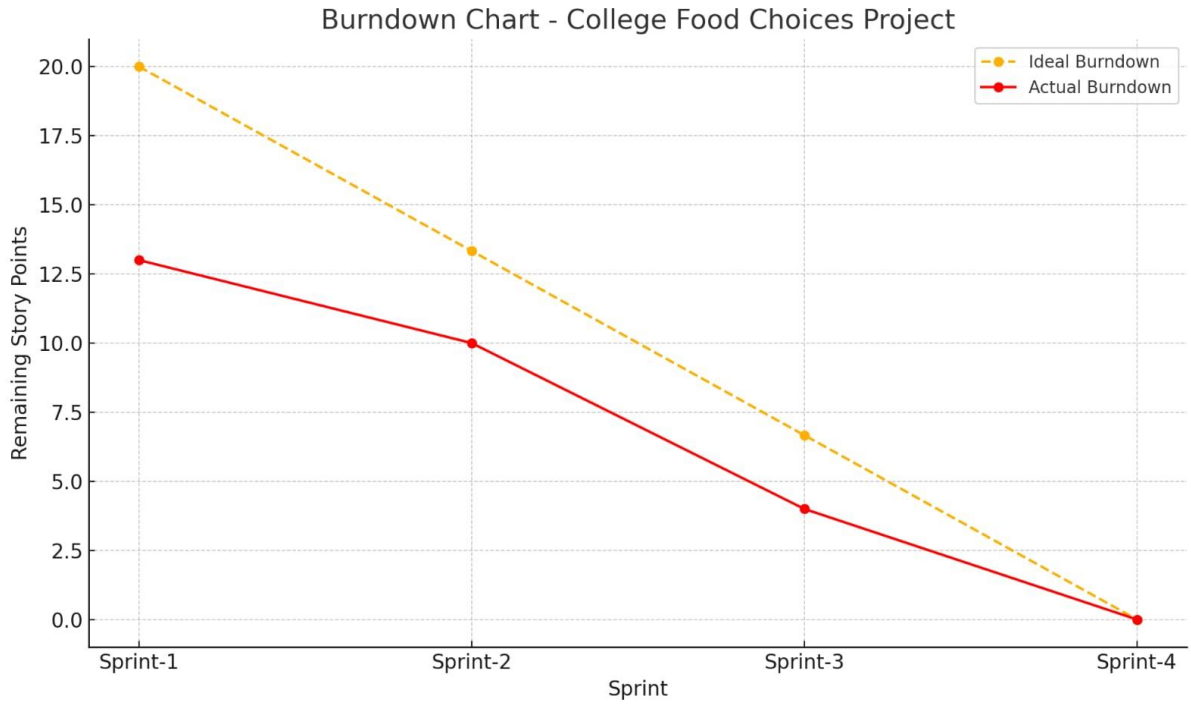
Total story points =7+3+6+4

=4

Number of sprints =4

Velocity = 20/4

= 5


Burndown Chart - College Food Choices Project
Ideal Burndown
Actual Burndown
Remaining Story Points
20.0
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
Sprint-1
Sprint-2
Sprint-3
Sprint-4
Sprint

6.FUNCTIONAL AND PERFORMANCE TESTING:

6.1Performance Testing:

Model Performance Testing:

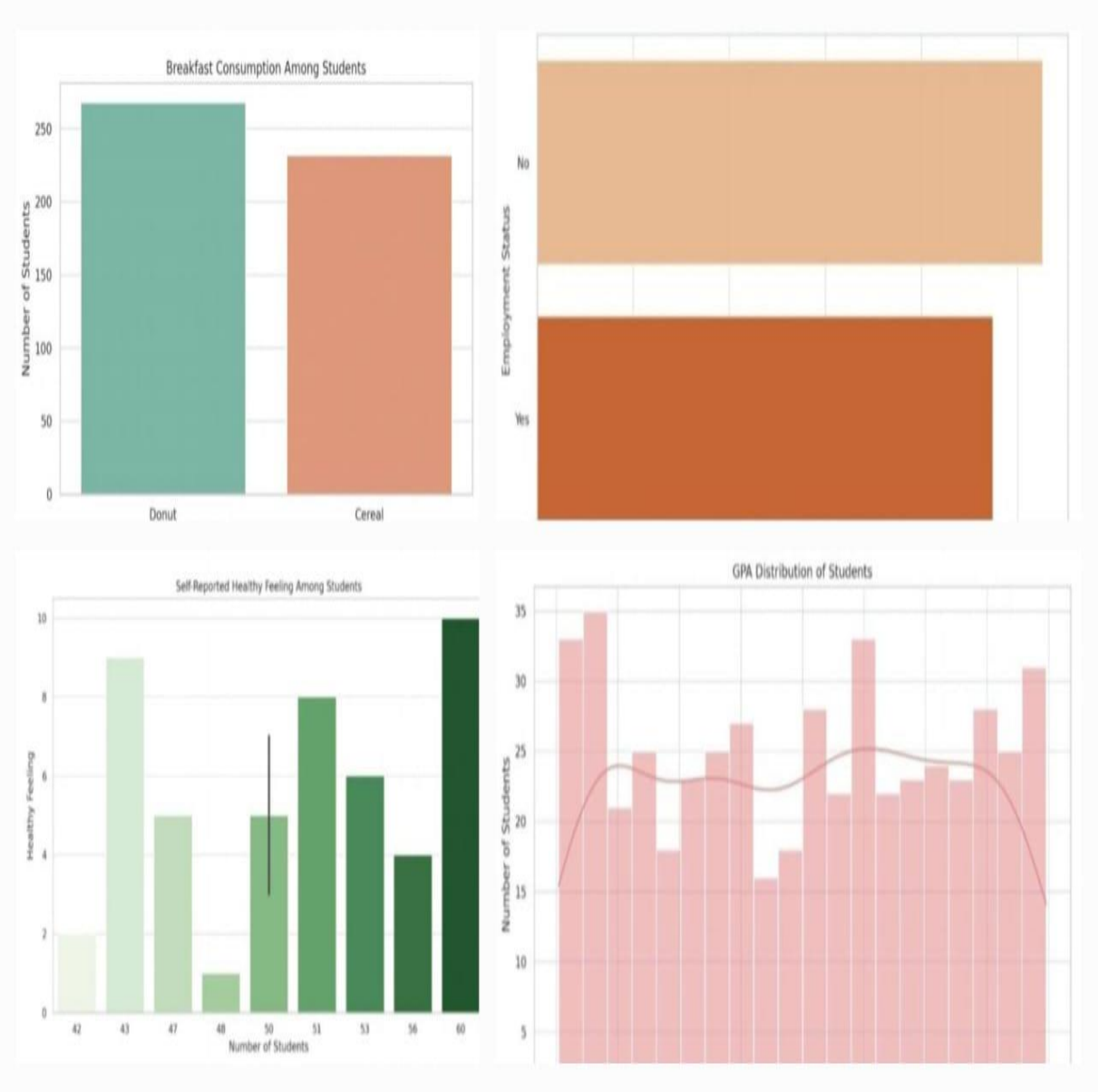
Project Team Shall Fill the Following Information in Model Performance Testing Template.

S. No.	Parameter	Screenshot / Values
1.	Data Rendered	Data Rendered 42 Rows 500 Columns
2.	Data Preprocessing	Handle Missing Values and Removed Duplicate Values
3.	Utilization Of Filters	Gender, Marital Status, Age Group, Calories Intake, Vitamin Intake, Breakfast Choice
4.	Calculation Fields Used	No
5.	Dashboard Design	No Of Visualizations / Graphs – 22 Visualizations 1. Gender Distribution - Bar Chat 2. GPA Distribution - Scattered Plot 3. Breakfast Consumption - Stacked Bar 4. Calorie Consumption Per Day - Box Plot 5. Favorite Comfort Foods - Bar Chat 6. Comfort Food Reasons - Bar Chat 7. Cooking Frequency Per Week - Scattered Plot 8. Cuisine Preferences - Bar Graph 9. Diet Status - Bar Chat 10. Exercise Frequency - Bar Graph 11. Employee Status - Box Plot 12. Health Feeling - Bar Graph 13. Life Rewarding Rating - Bar Chart 14. Marital Status - Pie Chart 15. Nutrition - Check - Bar Chart 16. Parental Cooking Habits - Bar Graph 17. Meal Payment Habits - Grouped Bar 18. Weight Self Perception - Bar Graph 19. Sports Participation - Box Plot 20. Veggie And Fruit Consumption - Heat Map 21. Vitamin Intake - Donut Chart
		22. Bar Graph
6	Story Design	No Of Visualizations / Graphs - 3 Visualizations 1. Vitamins Intake 2. GPA Distribution 3. Cuisine Preference Based on Childhood Exposure

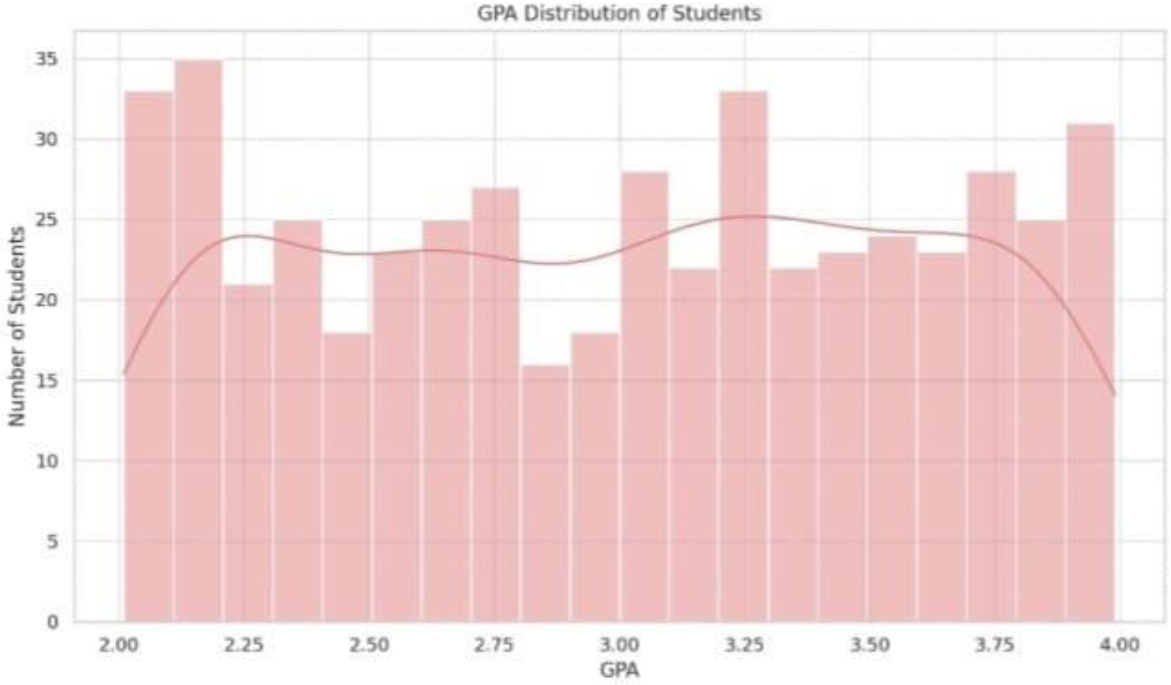
7.Results

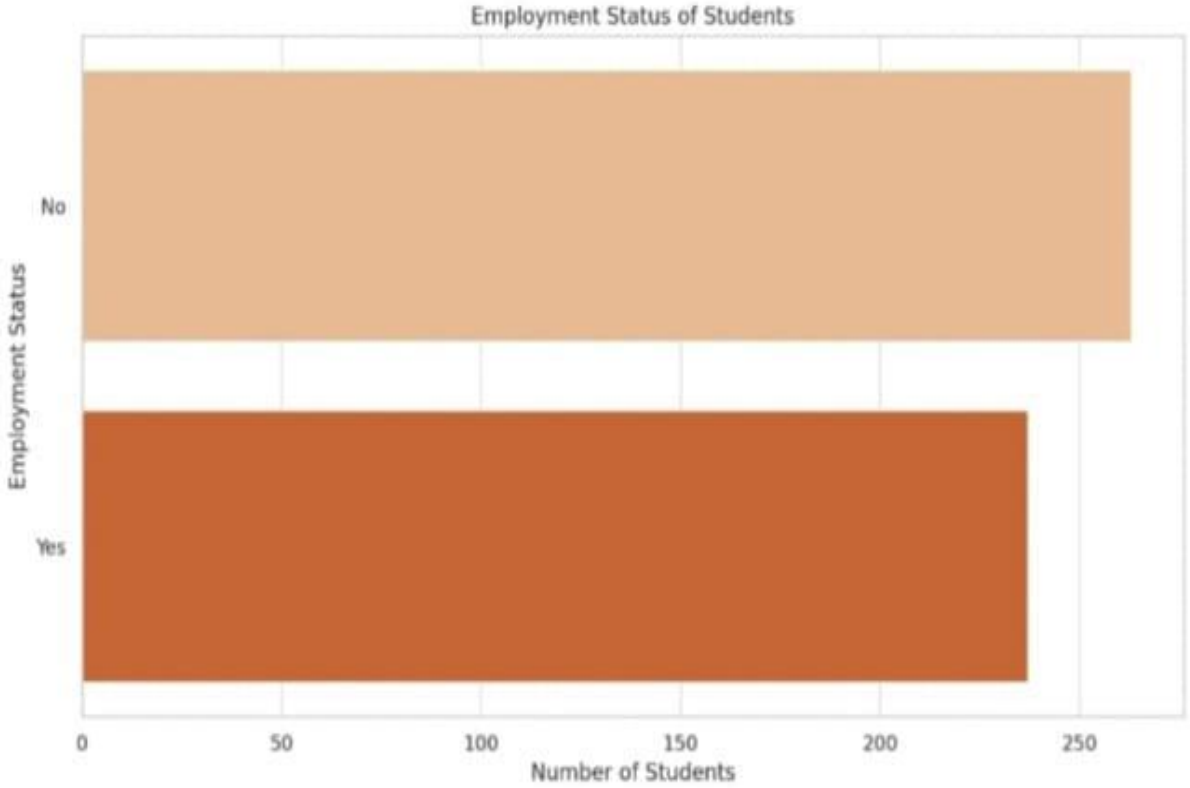
7.1Output Screenshot:

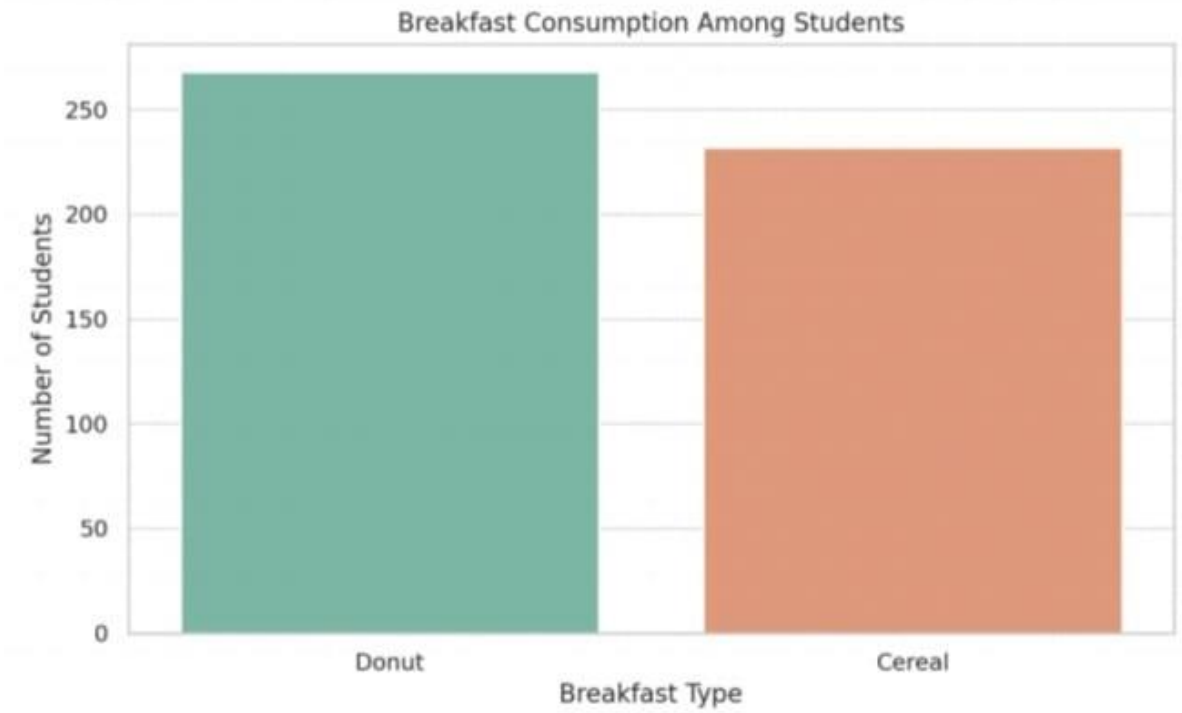
Dashboard:

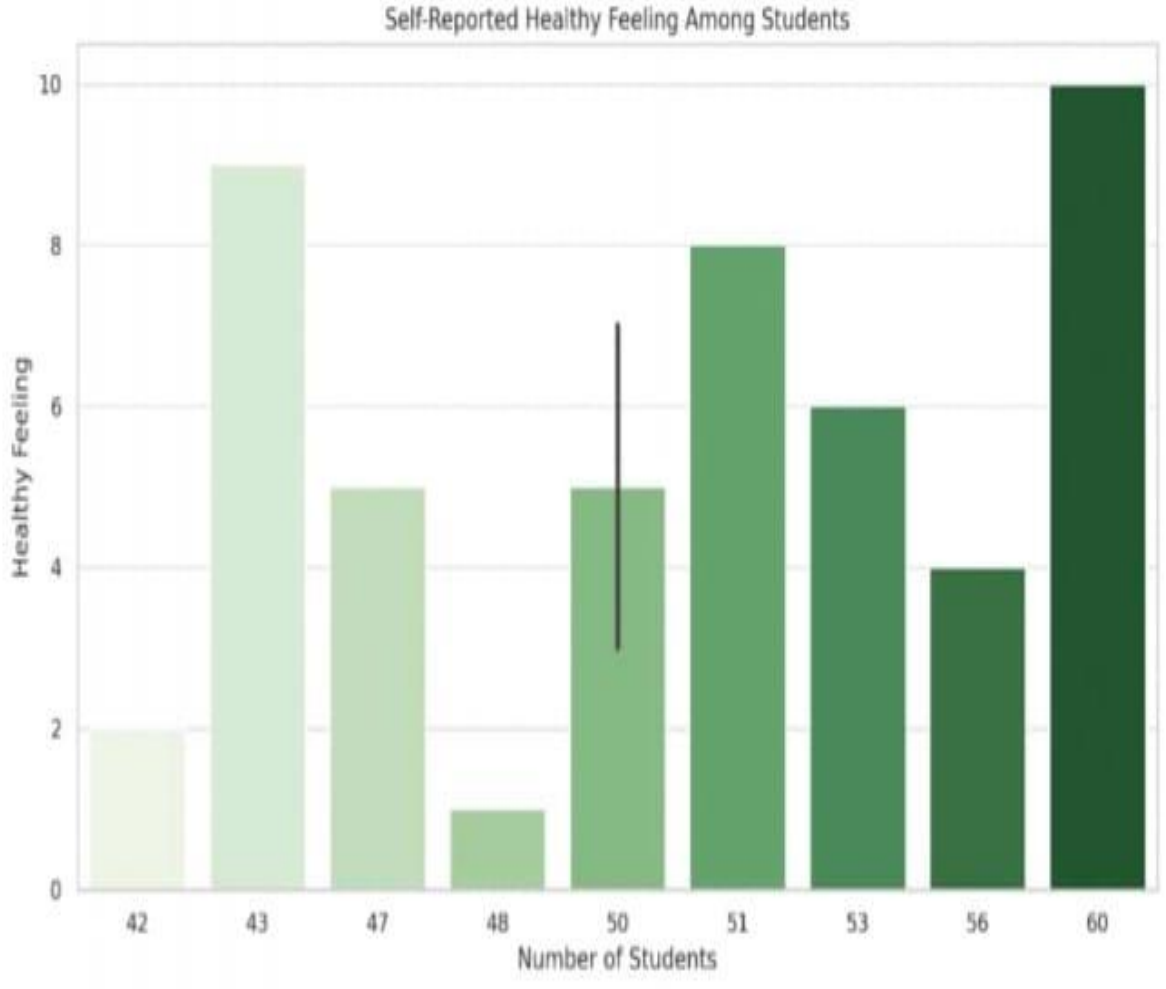


STORY:


GPA Distribution of Students
Number of Students
0
5
10
15
20
25
30
35
2.00
2.25
2.50
2.75
3.00
3.25
3.50
3.75
4.00
GPA


Employment Status of Students
Employment Status
No
Yes
0
50
100
150
200
250
Number of Students


Breakfast Consumption Among Students
Number of Students
250
200
150
100
50
0
Donut
Cereal
Breakfast Type


Self-Reported Healthy Feeling Among Students
Healthy Feeling
10
8
6
4
2
0
42
43
47
48
50
51
53
56
60
Number of Students

8.ADVANTAGES AND DISADVANTAGES

1. **Data-Driven Insights: Offers evidence-based understanding of dietary and lifestyle patterns among college students.**

2. **Visual Clarity with Tableau: Interactive dashboards make complex data easy to understand and share with stakeholders.**

3. **Health & Academic Impact: Helps identify how eating habits may affect student performance and well-being.**

4. **Actionable Recommendations: Supports the creation of targeted health programs awareness campaigns on campus.**

5. **Skill Development: Provides practical exposure to data analysis, visualization, and interpretation using real-world data.**

Disadvantages

1. **Limited Dataset Scope: Analysis is restricted to 500 students and may not generalize to all colleges or regions.**

2. **No Real-Time Updates: Static data does not reflect ongoing changes in behavior or environment.**

3. **Tool Dependency: Relies heavily on Tableau, which may limit flexibility for more advanced analytics.**

4. **Potential Misinterpretation: Users might confuse correlation with causation, leading to inaccurate conclusions.**

5. **Requires Technical Skills: Effective use of tools like Tableau or Python requires prior knowledge, which could limit access for students.**

9.Conclusion:

The project successfully demonstrates how data visualization and analysis can offer deep insights into the dietary patterns , health behaviors, and academic performance of college students. By leveraging tableau , the project simplifiescomplex datasets into interactive dashboards that are both accessible and actionable . The findings support the important of promoting healthy eating habits on campus and provide a foundation for future wellness initiati

10.Future Scope

1. Integration of Real-Time Data: Use of mobile apps or smart cafeteria systems to collect real-time dietary data from students.

2. Expansion to Multiple Institutions: Extend the study to other colleges or universities for broader, comparative analysis.

3. Longitudinal Studies: Track student habits over time to assess long-term effects of dietary behavior on health and academics.

4. Personalized Health Dashboards: Develop individual student dashboards with dietary tips, calorie tracking, and wellness goals.

5. Predictive Analytics: Use machine learning models to predict student health risks or academic performance based on dietary patterns.

6. Policy and Program Development: Inform college nutrition policies and health intervention programs with data-driven evidence.

11.Acknowledgement / Thank You Note:

I would like to express my heartfelt gratitude to Indraprakash Sir, my internship mentor, for his continuous guidance, support, and encouragement throughout this project. His expertise and insights have been invaluable in shaping my understanding of data analytics and visualization. I also extend my sincere thanks to SmartInternz for providing this valuable opportunity to work on a real-world project and gain practical experience in tools like Tableau. This internship has been an enriching and rewarding learning journey. Thank you once again for your constant support and mentorship.

11.1 APPENDIX:

Tools & Technologies Used

Tableau Public / Desktop – For data visualization and dashboard creation

Microsoft Excel – For data cleaning, preparation, and preprocessing

Google Sheets – For online collaboration and dataset sharing

SmartInternz Platform – For internship guidance and submissions