Project Design Phase
Solution Architecture

Date	28 June 2025
Team ID	LTVIP2025TMID47715
Project Name	Comprehensive Analysis and Dietary Strategies with Tableau
Maximum Marks	4 Marks

Solution Architecture:

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

- Find the best tech solution to solve existing business problems.

- Describe the structure, characteristics, behavior, and other aspects of the software to project stakeholders.

- Define features, development phases, and solution requirements.

- Provide specifications according to which the solution is defined, managed, and delivered.

Solution Architecture Overview

The solution architecture for our project, *"Comprehensive Analysis and Dietary Strategies with Tableau: A College Food Choices Case Study"*, outlines the data pipeline and visualization process used to deliver meaningful dietary insights.
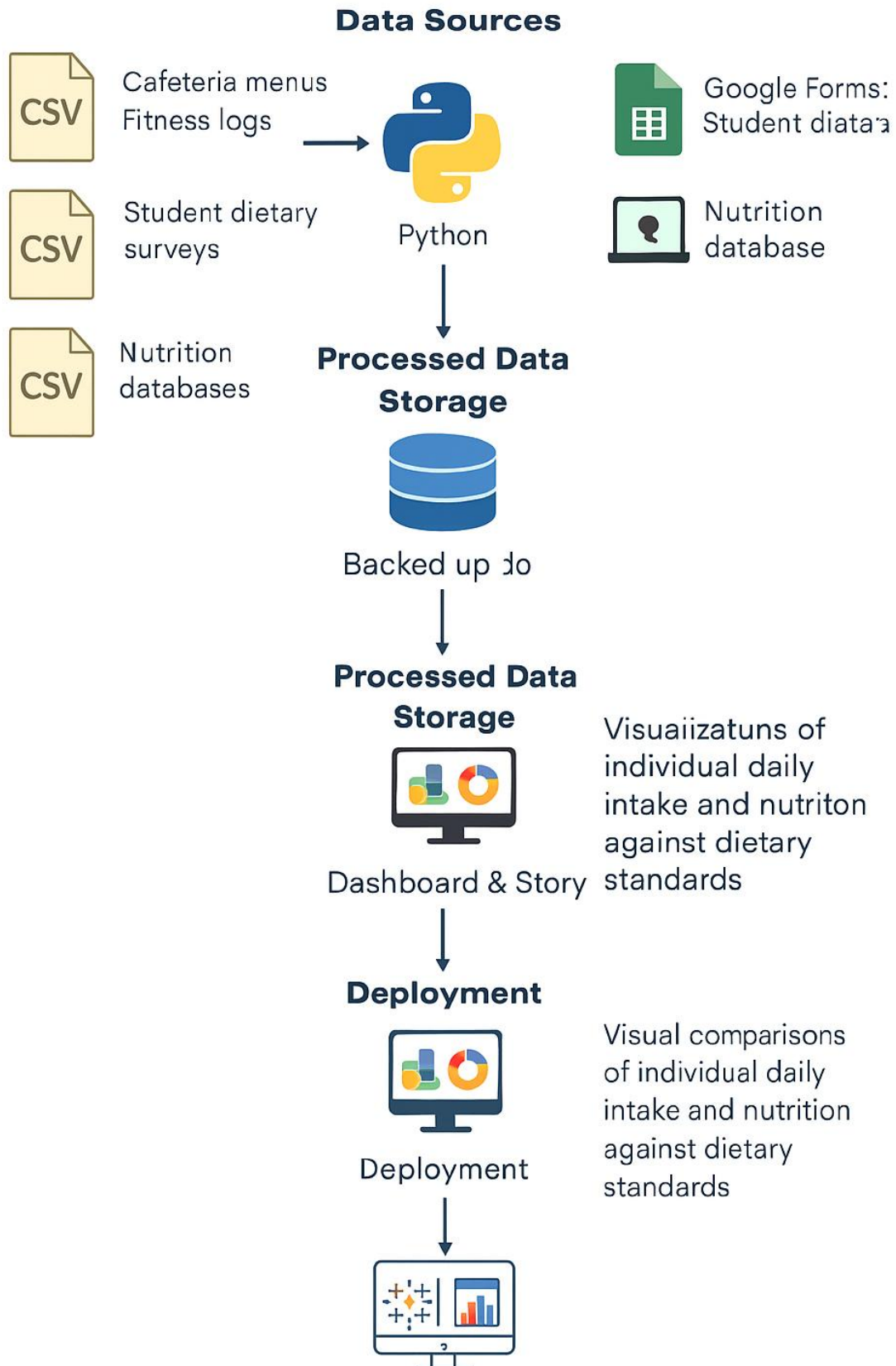
The system begins by collecting raw data from multiple sources, including college food consumption logs, student dietary surveys, and cafeteria nutrition databases in CSV format.

This data is cleaned and preprocessed using Python to ensure consistency and reliability. The cleaned datasets are then fed into Tableau Desktop, where filtering logic (based on diet type, calorie intake, frequency, etc.) and visual storytelling techniques are applied.

The resulting dashboards and summary stories are then published via Tableau Public, enabling stakeholders—including students, nutritionists, and college administrators—to interact with the visualizations on any device.

This architecture promotes informed decision-making by transforming raw food data into actionable dietary strategies, ensuring an evidence-based approach to enhancing student well-being and academic performance.

Example - Solution Architecture Diagram:

Data Sources

CSV — Cafeteria menus / Fitness logs

CSV — Student dietary surveys

CSV — Nutrition databases

Python

Google Forms: Student data

Nutrition database

Processed Data Storage

Backed up to

Processed Data Storage

Dashboard & Story

Visuaiizatuns of individual daily intake and nutriton against dietary standards

Deployment

Deployment

Visual comparisons of individual daily intake and nutrition against dietary standards

Solution Architecture and Data flow of the College Food Choices