6. Solution Requirements

This section outlines the key **technical and functional requirements** necessary to implement the *College Food Choices Visualization System*. The goal is to ensure a robust, scalable, and user-friendly analytics platform that effectively communicates dietary patterns and trends among students.

6.1 Functional Requirements

ID	Requirement
FR-01	The system must load and preprocess dietary CSV data for visualization
FR-02	The Tableau dashboard must support interactive filtering (e.g., gender, GPA)
FR-03	Users should be able to view visual summaries of calorie intake, habits, etc.
FR-04	Dashboards must be embedded in a Flask web interface for external access
FR-05	The system must support storytelling features (multi-scene dashboard navigation)
FR-06	Users should not need to log in or authenticate to access dashboards

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6.2 Non-Functional Requirements

ID	Requirement
NFR-01	The system should be responsive and render across desktop and mobile browsers
NFR-02	The dashboard must load within 3–5 seconds under normal data load conditions
NFR-03	The embedded dashboard must maintain secure access without exposing raw data
NFR-04	Visuals should maintain consistency in color, layout, and label clarity
NFR-05	The system must support scalability for future datasets (e.g., semester updates)

6.3 Platform & Tool Requirements

Component	Requirement
Data Format	CSV (.csv)
Visualization Tool	Tableau Desktop & Tableau Public/Server
Web Framework	Python Flask
Hosting	Render / Vercel (for Flask deployment, optional)
Hardware	Minimum 8 GB RAM, internet access, modern browser
Optional Tools	Tableau Prep (for advanced data cleaning)

6.4 Key Assumptions

- Users will access dashboards passively (no input required).
- The dataset is static and doesn’t require real-time data syncing.
- Flask is used only for UI presentation and not backend processing.
- Visualizations are publicly shareable and do not contain sensitive PII.