**Data Collection and Preprocessing Phase**

**Data Quality Report:**

The Data Quality Report summarizes data quality issues encountered during the preprocessing of inputs for the Nutrition AI application. Since the project primarily uses simulated and user-generated data, this report addresses the quality challenges specific to those inputs, including severity levels and resolution plans.

| **Data Source** | **Data Quality Issue** | **Severity** | **Resolution Plan** |
| --- | --- | --- | --- |
| User Uploaded Images | Poor image quality (blurry, low resolution), affecting nutritional analysis. | High | Prompt users to upload high-quality images and resize images for better clarity. |
| Text Inputs | Inconsistent input prompts lead to varied model responses. | Moderate | Standardize input prompts using predefined templates and guide users on prompt creation. |
| Fitness Tracker API | Missing or incomplete fitness data when API credentials are incorrect or missing. | Moderate | Implement fallback recommendations; notify users to check API access settings. |
| Simulated Data | Limited variability in simulated data affects the robustness of model testing. | Low | Expand simulated data scenarios to cover a broader range of dietary inputs. |
| User-Provided Data | Errors in manual data entry (e.g., incorrect nutritional values in prompts). | Moderate | Validate user input with basic checks and suggest corrections in real time. |

This Data Quality Report identifies key data quality challenges encountered with inputs used in the Nutrition AI project. The resolution plans aim to enhance data consistency and accuracy, thereby ensuring that the Gemini Pro model delivers reliable and personalized dietary recommendations.