

VoISE HACKATHON 2025

PlateWise

Problem Statement Title - Smart Diet Analyzer using AI

Theme - Smart Healthcare Systems

PS Category - Software

Team Name - WizTech

Branch - Information Science

Semester - V

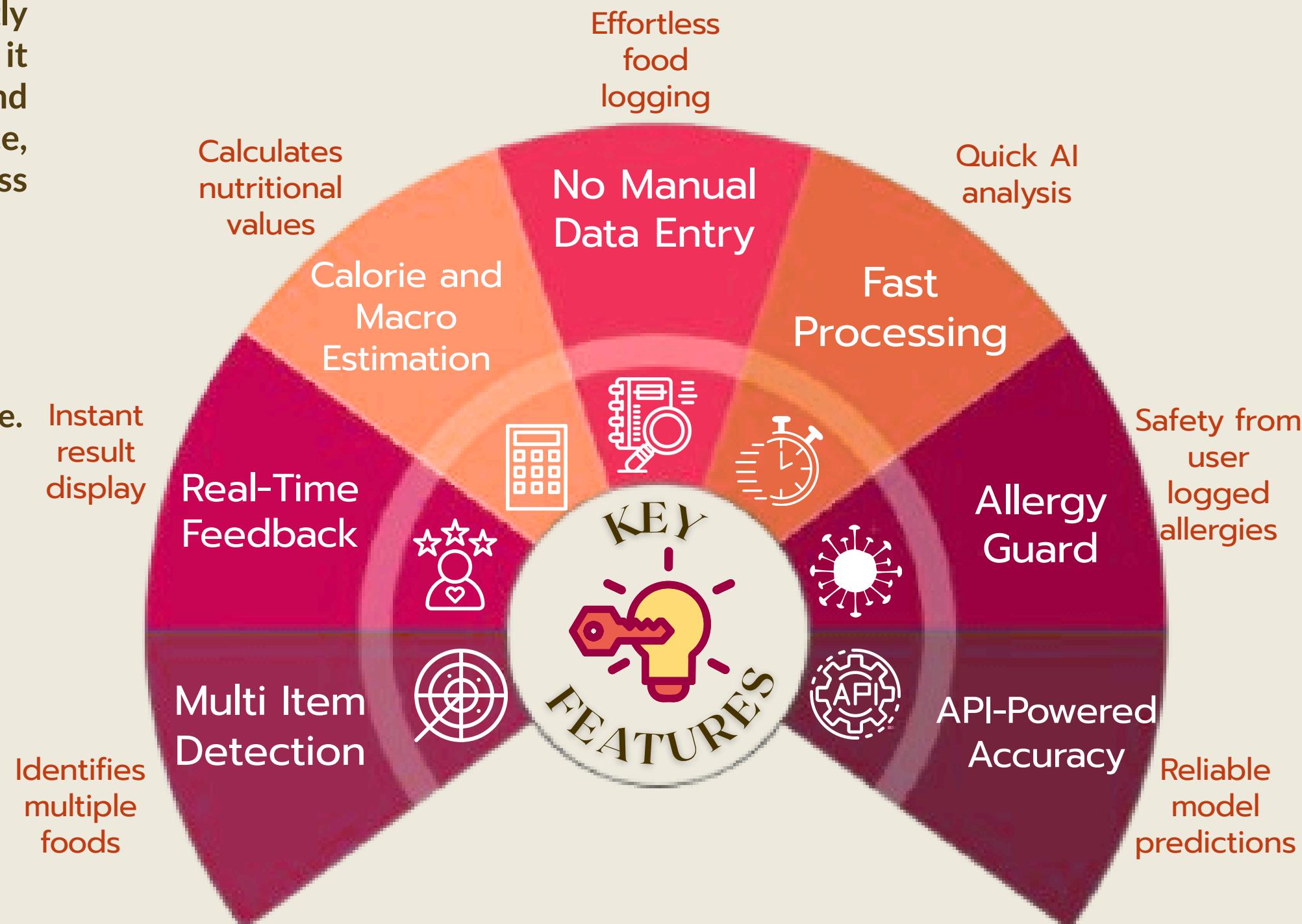
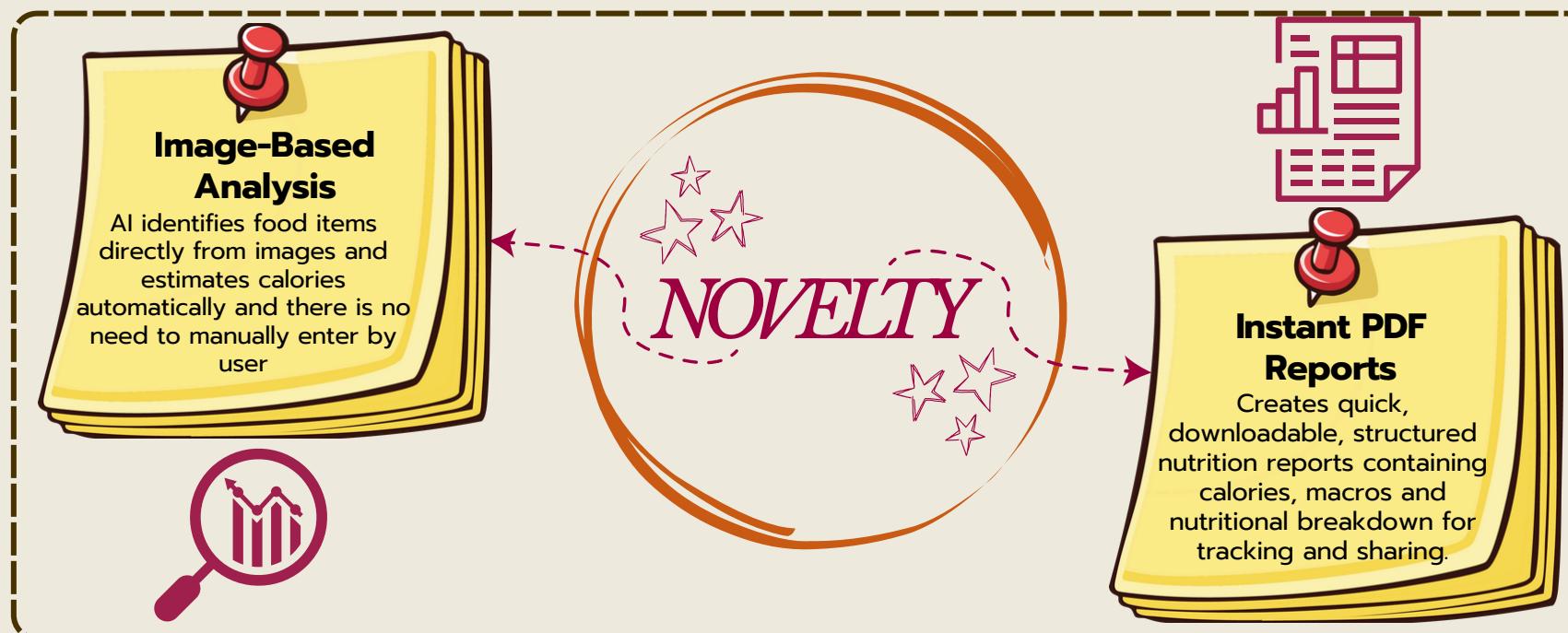


Overview

PlateWise is an AI-driven application that analyzes food images to instantly estimate calories and nutritional values. Designed for easy day-to-day use, it helps users understand their meals better by identifying food items and generating detailed nutrition reports. The system offers a clean interface, fast processing, and practical insights, making it useful for students, fitness enthusiasts, and anyone aiming to maintain a healthier diet.

Problem Addressed

- People struggle to understand the nutritional value of their meals.
- Calorie tracking is time-consuming and often inaccurate when done manually.
- Users cannot easily identify what food items contain without expert knowledge.
- Lack of accessible tools to estimate nutrition directly from food images.
- No simple way to generate quick, shareable nutrition reports for health or fitness tracking.



FRONTEND

Simple UI for uploading images, previewing detections, and downloading PDFs.
 Supports drag-and-drop, visual overlays (boxes/masks), and minor user edits.
 Streamlit is fastest for prototypes; React/Next.js for production-grade apps.

AI ENGINE

Object detection/segmentation locates food; classifier labels items.
 Portion estimation via reference object or monocular size estimation.

- Map item + estimated grams → calories using a nutrient lookup table.

BACKEND AND CORE

- All processing happens locally inside the Streamlit app.
- Llama 4 Scout returns results in JSON, which the app parses directly.
- No separate server or database – lightweight, self-contained backend logic.

PERSONALIZED AI CONTENT AND API'S

Endpoints for upload, status, result retrieval, report download, and feedback.
 Document with OpenAPI/Swagger; protect with JWT/OAuth and rate limits.
 Design idempotent uploads and sensible error responses for robustness.

PROCESS FLOW

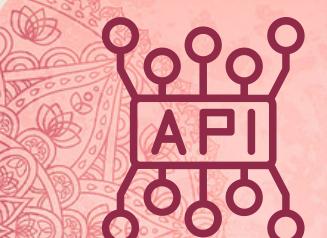
Image Upload



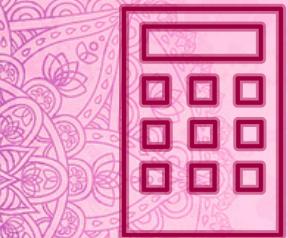
Preprocessing



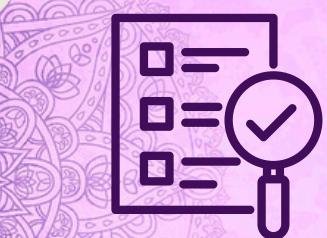
Food Identification



API Request



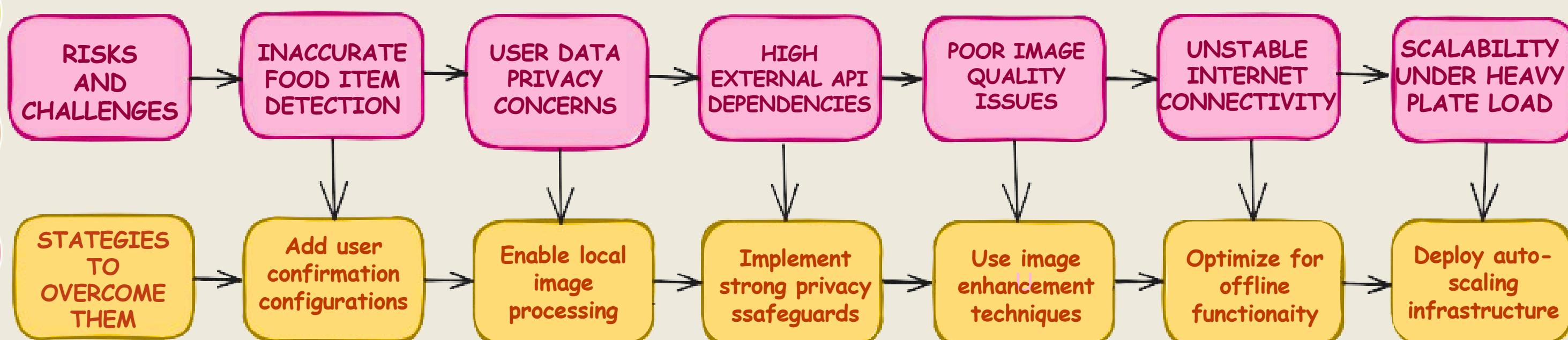
Nutrition Estimation



Result Display



PDF Report Generation

FEASIBILITY
ANALYSIS

IMPACT AND BENEFITS

Quick Nutritional Insights

Provides instant understanding of calorie and macro content

Encourages Healthier Eating

Increases awareness of food choices and portion sizes

Zero Manual Tracking

Eliminates tedious calorie logging, reducing effort

Accurate AI Assistance

Offers reliable food identification and nutrition estimates



Useful for Fitness & Diet Plans

Supports dietary analysis for individuals and professionals

Accessible & Easy to Use

Features a simple UI suitable for all users

Real-Time Report Generation

Allows convenient tracking and sharing of nutrition data

