

SmartBite:

AI-Driven Food Demand Forecasting and Waste Reduction System

Project Overview

Objectives:

- **Predict Daily Food Demand** – Forecast the required quantity of each menu item for breakfast, lunch, and dinner.
- **Model Traffic Patterns & Event-based Demand** – Capture demand shifts due to time slots (breakfast vs lunch) and special occasions (festivals, exams, college events).
- **Analyze Student Preferences & Suggest Menu Adjustments** – Identify high- and low-demand items, group students by food habits, and recommend alternative dishes to improve satisfaction.
- **Deliver Actionable Insights via Dashboard** – Present predictions, demand trends, and recommendations in an interactive dashboard for cafeteria managers.

Target Users:

- College administration & cafeteria management
- Chefs and kitchen staff for menu planning

Benefits:

- Reduce food waste → cost savings & environmental sustainability
- Improve cafeteria efficiency with better inventory and staff planning
- Increase student satisfaction with preference-aware menu design
- Provide data-driven decision support to cafeteria managers