Project Planning

1. Project Overview

The **Restaurant Survey App** is a cross-platform mobile application built with **Flutter** that allows restaurant customers to explore meals, submit ratings, write comments, and even record voice reviews.
The app also provides an **Admin Dashboard** to help restaurant managers analyze meal performance, ingredient feedback, and overall customer satisfaction.

This system bridges the gap between customers and restaurants by collecting structured, meaningful data, enabling continuous quality improvement.

2. Project Objectives

- Provide users with a simple, bilingual interface to review meals (English ↔ Arabic).
- Enable restaurants to collect quantitative (ratings) and qualitative (comments, voice) feedback.
- Support smart validation between ratings and comments to detect inconsistencies.
- Offer an admin dashboard with filtering, sorting, and ingredient-level insights.
- Store and manage all data efficiently using a normalized, scalable database.

3. Project Scope

- Development of a **User Mobile App** for browsing meals, submitting ratings, and writing or recording feedback.
- Implementation of an **Admin Dashboard App** to view aggregated ratings, comments, and ingredient-level analysis.
- **Voice feedback** option allowing users to record short reviews.
- **Bilingual support** (English & Arabic) for broader accessibility.
- **Database integration** with Supabase for authentication, data storage, and synchronization.
- **Smart validation** to ensure consistency between ratings and comments.

4. Project Components

Component	Description
User App	Allow customers to browse meals, rate them, and leave comments or voice feedback.

Component	Description
Admin App	Provides dashboards with ratings, total reviews, and per-ingredient analysis.
Database	Stores meals, ingredients, users, and reviews using normalized relations.
Backend	Supabase (or Firebase) manages authentication, real-time sync, and database APIs.

5. Tools and Technologies

Category	Tool/Technology
Frontend	Flutter (Dart)
Backend	Supabase
Design	Figma
Version Control	GitHub
IDE	Android Studio
Documentation	Microsoft Word

6. Team Roles

Role	Member	Responsibilities
Project Lead	Mohamed Wael Mohamed Safwat	Database design, Flutter implementation, testing
Developer	Abdelrahman Amr Abouzeid	Database design, Flutter implementation, testing
UI/UX Designer	Muhammed El-Hussein Taha Omar Mohamed Hassan	Design wireframes and ensure usability, Flutter implementation, testing
Documentation Specialist / Developer	Omar Magdy	Prepare the final report and visuals, Flutter Implementation, testing

7. Expected Outcome

- A functional Flutter app for customers and admins.
- Accurate, relational database with many-to-many links between meals, ingredients, and reviews.
- A bilingual, user-friendly UI/UX.
- Insightful dashboards for restaurant performance.

- Full documentation (planning, stakeholder analysis, database design, UI/UX).

Stakeholder Analysis

1. Overview

Stakeholder analysis identifies all individuals and groups who have an interest in or influence over the project. Understanding their needs, expectations, and level of involvement helps ensure the project is successfully designed, developed, and deployed.

2. Table

Stakeholder	Role / Description	Interest in the Project	Level of Influence	Expectations / Responsibilities
End Users (Customers)	Individuals who browse meals, view ingredients, and submit reviews.	High	High	Expect an easy-to-use, fast, and reliable app to explore meals and share opinions.
Restaurant Owners / Admins	Manage meals, ingredients, and monitor user reviews.	High	High	Need accurate data management and an admin dashboard to monitor app content.
Developers	Responsible for coding, testing, and deploying the system.	High	Medium	Expect clear requirements and a database structure for efficient development.
UI/UX Designers	Design the app's interface and ensure a smooth user experience.	Medium	Medium	Need user feedback and functional requirements to guide the design.
Project Manager / Team Leader	Oversees the project timeline and deliverables, ensuring coordination among team members.	High	High	Ensures the project stays on schedule, meets scope, and aligns with stakeholder needs.
Database Administrator (DBA)	Designs and maintains the database schema and relationships.	Medium	Medium	Ensures data consistency, normalization, and efficient performance.

Stakeholder	Role / Description	Interest in the Project	Level of Influence	Expectations / Responsibilities
DEPI Program / Instructor (Evaluator)	Reviews the project as part of an academic or training assessment.	Medium	High	Expects professional documentation, clean architecture, and functional implementation.

3. Influence vs Interest

Influence	Low Interest	High Interest
High Influence	Instructor / Evaluator	Restaurant Owners, Project Manager
Low Influence	UI/UX Designers	End Users, Developers

4. Summary

Effective communication and collaboration between all stakeholders ensure the success of the Restaurant Review App. The project's focus is on balancing user satisfaction, administrative control, and technical feasibility within the defined scope.

Database Design

1. Overview

The database design aims to ensure efficient data organization and retrieval for both the **User App** and **Admin App**.
It follows a **relational model** with **normalized tables** to reduce redundancy and maintain consistency between meals, ingredients, reviews, and users.

2. Entity-Relationship (ER) Model

The system is built around four main entities and several relationship tables connect them.

Entity	Attributes	Description
Users	user_id (PK), phone, name, password, created_at	Stores user details.
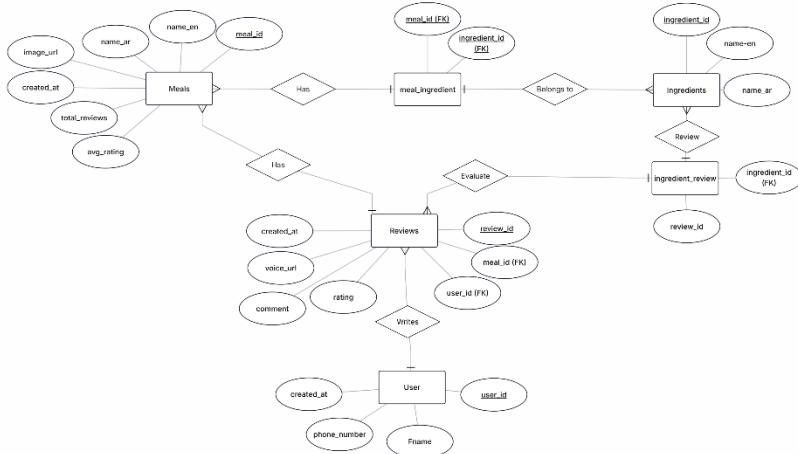
Entity	Attributes	Description
Meals	meal_id (PK), meal_name, meal_image, description	Represents each meal available for review.
Ingredients	ingredient_id (PK), ingredient_name, ingredient_image	Stores meal ingredients.
Reviews	review_id (PK), rating , comment, voice_review_url, created_at, user_id (FK), meal_id (FK)	Contains user feedback, including text and voice reviews.

3. Relationship Tables

Table Name	Attributes	Relationship Type	Description
Meal_Ingredients	meal_id (FK), ingredient_id (FK)	Many-to-Many (Meals, Ingredients)	Defines which ingredients belong to each meal.
Ingredient_Reviews	ingredient_id (FK), review_id (FK), ingredient_rating	Many-to-Many (Ingredients, Reviews)	Stores the user's perception of specific ingredients within a review.

4. Schema Diagram

The following **Entity–Relationship Diagram (ERD)** illustrates the structure of the database and the relationships among all entities used in the Restaurant Survey App.

UI/UX Design

1. Overview

The **UI/UX design** aims to create an intuitive, visually appealing, and bilingual experience for both users and administrators. The goal is to make meal browsing, reviewing, and management easy, accessible, and enjoyable for all stakeholders. The design adheres to **Material Design principles** and utilizes Flutter's cross-platform components to ensure visual consistency.

2. Design Goals

| Goal	Description
Simplicity	Keep navigation clear with minimal screens and straightforward actions.
Accessibility	Support both Arabic and English languages (RTL & LTR layout support).
Usability	Provide a smooth user flow for adding reviews and switching between pages.
Consistency	Use unified color themes, fonts, and iconography throughout the app.
Responsiveness	Ensure optimal layout across different devices and screen sizes.

3. User App Interface
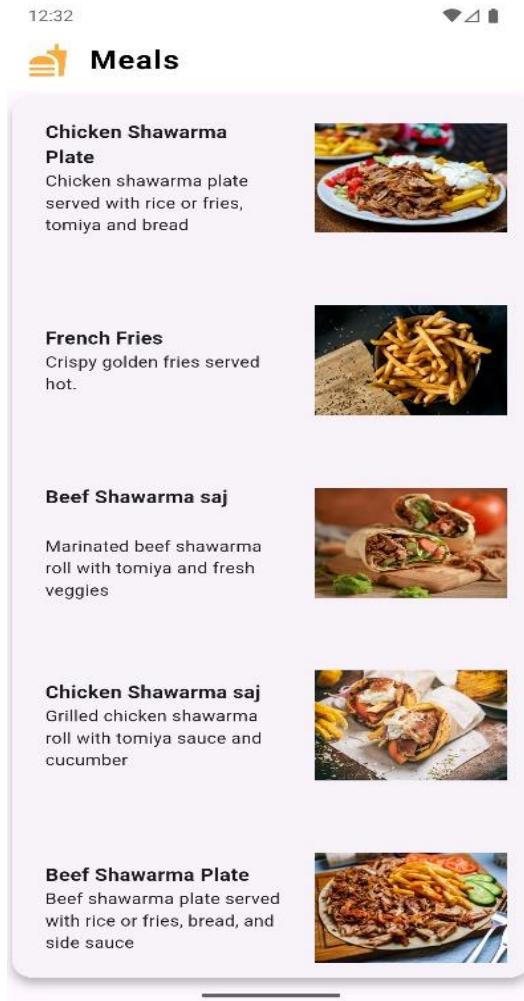
- **Meal List Page**

This is the main browsing screen for users. It displays all meals with their images, names, and short descriptions. Users can scroll through the list and tap on any meal to open its details.

Key UI elements:

- Vertical scroll list
- Meal card with:
  - Thumbnail image
  - Meal title
  - Short Description
- Clean spacing and rounded containers

Mockup:

- **Meal Details & Survey Page**
  When a user selects a meal, they are taken to the detailed screen designed to collect structured feedback.
  Features:
  - Large meal image at the top
  - Survey Section containing:
    - Service rating (1–5 stars)
    - Food Quality rating (1-5 stars)
    - Overall Experience rating
    - Comment box with voice recording option
    - Recommendation dropdown
  - "Submit" button with visual emphasis
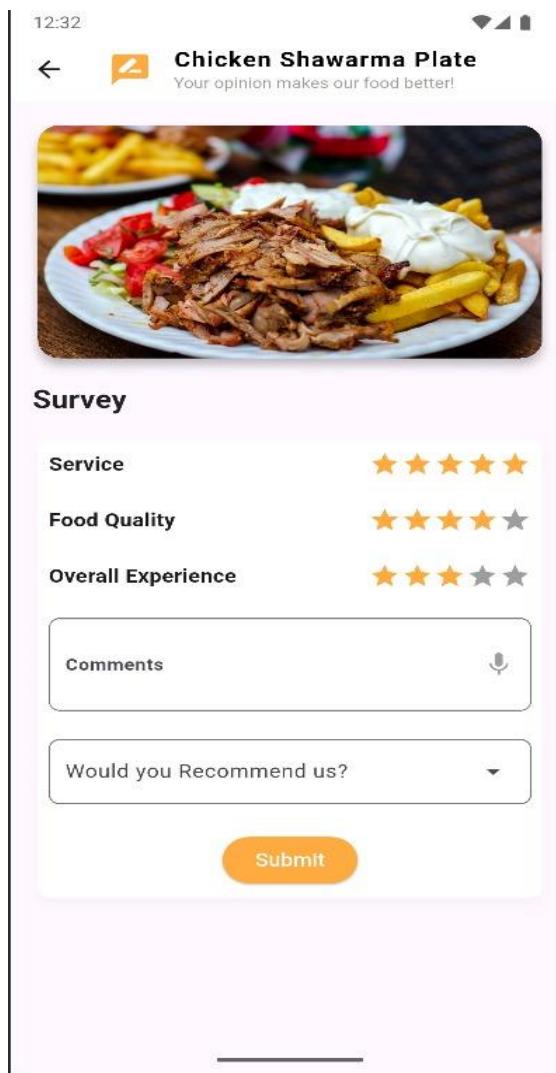
- Real-time validation to detect inconsistent reviews

Mockup:

- **Language Toggle**
  - Button in the app bar or settings to switch between English and Arabic instantly.
  - Automatically mirrors layout for RTL support when Arabic is selected.

4. **Admin App Interface**
   - **Dashboard Page**

- Display all meals with:
    - Image Thumbnails
    - Average rating
    - Total number of reviews
- Includes sorting and filtering tools
- **Meal Analysis Page**
    - Shows:
        - Overall meal rating
        - User comments and linked voice reviews.
    - Designed for data visibility and easy review management.

5. Color Palette & Typography

The app uses fresh, warm, food-friendly colors aligned with appetizing UI trends.

Element	Style
Primary	*#FF7043 (Deep Orange)*
Secondary	*#FFC107 (Amber)*
Buttons	*Orange gradient*
Background	*#FFFFFF (White)*
Text	*#212121 (dark grey)*
English Font	*Roboto*
Arabic Font	*Cairo* (supports RTL beautifully)

6. Interactive Elements & UX Features

- **Star Ratings**: Easy-to-use tap-based system.
- **Voice Reviews**: Users can record audio instead of typing.
- **Dropdown Recommendations**: For structured survey responses
- **Animated Transitions**: Smooth page navigation and card animations.
- **RTL Support**: Full mirroring for Arabic UI.

7. Tools & Frameworks Used

- **Flutter**
- **Figma** for UI Mockups
- **GetX/Provider** for State Management
- **Google Fonts** for multi-language typography

8. Summary

The UI/UX design focuses on delivering:

- A smooth experience for customers submitting meal reviews
- A powerful analytical interface for administrators
- A modern, bilingual, and visually consistent design
- Accessible interactions such as voice input, intuitive ratings, and RTL support