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**Type chapter title (level 1)1**

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I. UI

1. Main Screen:

* Top Section (1/3): Provides an area for uploading receipts. Users can either upload an image (e.g., photo of receipt) or input text manually. A toggle switch allows switching between image upload mode and text input mode.
* Middle Section (1/3): Displays a “Discovery Area” showcasing featured recipes with images and brief highlights (e.g., trending or popular dishes).
* Bottom Section (1/3): Displays a “Discounted Products” section, showing a scrollable list of highlighted food products currently on sale.

1. Cook Screen:

* Displays the history of all previously uploaded receipts in a vertical list. Each receipt entry can be selected to open the related cooking workflow.
* Each entry has a three-dot menu (⋮) on the right, which provides the following options:
  + Delete: Removes the selected receipt and its associated generated recipes from storage.
  + Edit: Opens a popup in table format with three columns:
    - Select box (to mark which row is used for analysis).
    - Product Name (editable).
    - Quantity (editable).
  + Pin to Top: Marks the selected product(s) as priority items. Pinned products appear at the top of the list. Multiple products can be pinned. Selecting the feature again will unpin the product.
  + Share: Generates a shareable text including recipe information, product names, and required quantities.
* When a user modifies product name or quantity, the updated information will be stored as the official receipt data. Selected rows will be used as the input dataset for the Analyze Screen.
* When a user clicks on a specific receipt row, the product and quantity data are automatically transferred to the Analyze Screen..

1. Analyze Screen:
   * Displays the selected receipt in a structured table format:
     + Column 1: Product Name.
     + Column 2: Quantity.
   * At the bottom, there is an “Analyze” button.
   * When clicked, the system’s AI analyzes the selected products and quantities to generate appropriate cooking suggestions.
   * The result will be displayed in the Cooking Set Screen.
2. Cooking Set:

* Displays a grid of recipe suggestions that can be prepared from the provided ingredients.
* Each recipe card includes:
* A representative image.
* Dish title.
* A short description (e.g., flavor notes, type of cuisine, preparation style).
* Nutritional information (calories, protein, fat, carbs).

When a user selects any recipe, the Cooking Time Screen will open with full cooking instructions.

1. Cooking Time Screen:

* Displays the full recipe instructions in text format, including:
  + List of required ingredients.
  + Step-by-step cooking process with estimated time for each step.
  + Total preparation and cooking time.
* At the bottom, there is a “Save Recipe” button allowing users to save the selected recipe to their profile.
* An additional “Share Recipe” option can be provided for exporting the recipe to email or text.

1. Profile screen:
   * Displays user account information and saved recipes.
   * Features include:
     + Viewing and managing saved recipes.
     + Editing account details (e.g., username, phone number, password).
     + Updating sharing preferences.
   * Acts as a personal hub where users can access all recipes they have saved or shared.

II. Requirements

1. Iteration 1:
   1. GUI Development: Main Screen, navigation menu, and tabbed interface.
   2. Upload Receipt Module.
   3. Supports file formats: png, img, jpg, text.
   4. Displays files with their status (Pending, Processing, Completed, Failed).
   5. File Uploads: Users can upload and track one files at a time.
   6. Database Module: receipt model database: product name(string), volumn (byte), price (double), market source (string), date (date). Fomular database: product name(string), volumn (byte), price (double), market source (string), date (date), ID (int).
   7. GUI Development: Cook Screen, Adjustment popup, navigation menu, and tabbed interface.
2. Iteration 2 .
   1. GUI Development: Analyze Screen, navigation menu, and tabbed interface.
   2. GUI Development: Cooking Set Screen, navigation menu, and tabbed interface.
   3. Analyze Code Module.
   4. Recommendations log: Displays suggested formular for “Cooking Set” screen.
3. Iteration 3:
   1. GUI Development: Cooking Set Screen, navigation menu, and tabbed interface.
   2. Dashboard Overview: Displays trends, area, and quick actions.
   3. GUI Development: Cooking Time Screen, navigation menu, and tabbed interface.
   4. Save Options: Users can save the result to profile.
   5. Share Options: User can share result to platform (email, public, text).
4. Iteration 4:
   1. GUI Development: User profile, navigation menu, and tabbed interface.
   2. User profile database: saved formular.
   3. Shared Cook module.
5. Extended phrase: Login Page includes simple interface with functions: User input (username, password), login button, recovered link.

III. Parallel Work Activities for Code Insight

First, the foundational structure of the CodeInsight application needs to be implemented, including the Graphical User Interface (GUI) with dashboard, navigation menu, and tabbed panes. This core structure must be completed before adding advanced features such as the Upload Code module, Code Analysis module, and Reporting module into their respective tabbed panels. Since these feature modules depend only on the completion of the main application structure, their development can proceed in parallel once the base GUI and navigation are in place.

IV. Milestone for Cooking Assistant Application

1. Technical Milestone: Cooking Assistant Requirements Completed

* Clearly define and review all functional and non-functional requirements.
* Verify that use cases (upload receipt, analyze, suggest recipes, save/share) are documented.

1. Technical Milestone: Cooking Assistant Design Completed

* Create detailed UI design for all screens (Main, Cook, Analyze, Cooking Set, Cooking Time, Profile, Login).
* Approve the database schema (Receipt model, Recipe/Formula model, User model).
* Confirm workflow for receipt → analyze → recipe generation.

1. Technical Milestone: Overall Application Structure Completed

* Implement navigation system with tabbed interface.
* Implement Main Screen (upload area, featured recipes, product highlights).
* Ensure consistent branding and responsive layout across devices.

1. Technical Milestone: Receipt Upload & Database Module Completed

* Implement functionality to upload receipts (image or text) in supported formats (.png, .jpg, .jpeg, .txt).
* Display file status (Pending, Processing, Completed, Failed).
* Store uploaded metadata into database (product name, quantity, price, source, date).
* Allow editing/deleting receipt entries.

1. Technical Milestone: AI Analyze & Recipe Suggestion Completed

* Implement Analyze Screen to display receipt contents in table format.
* Integrate AI to parse products and suggest potential cooking formulas.
* Displayed recipes in Cooking Set screen with image, description, nutrition info.
* Allow edit/pin/share actions for receipt data.

1. Technical Milestone: Cooking Time & Recipe Management Completed

* Implement Cooking Time screen to show full recipe with step-by-step instructions and cooking time.
* Add functionality to save recipes to Profile.
* Add share functionality (text/email/export).

1. Technical Milestone: User Profile & Login System Completed

* Implement Profile screen with saved recipes list and account settings.
* Implement Login page with authentication, input validation, session handling.
* Add “Forgot Password” and “Sign Up” support.

1. Technical Milestone: Testing & Validation Completed

* Design test cases for all modules (receipt upload, analyze, recipe suggestion, profile).
* Conduct functional, UI, and integration testing.
* Verify correctness and completeness of AI recipe generation.
* Validate data persistence across sessions.

V. Task Set for Code Inside

1. Overall Application Structure & Navigation
   1. Graphical User Interface (GUI) and Navigation
      1. Develop a windowed/mobile application using an object-oriented language (e.g., Kotlin/Java/Flutter).
      2. Implement a bottom navigation menu with tabs: Home, Cook, Analyze, Cooking Set, Profile.
      3. Add standard window controls: Back, Exit (Exit prompts “Save / Discard Changes” dialog).
      4. Update the app title to “Cooking Assistant” when a project is created or opened.
   2. Main Screen Interface
      1. Create a main screen with three sections:Top: Upload area (switch between text input and image upload).Middle: Featured recipes carousel.Bottom: Discounted product highlights.
      2. Apply consistent branding with light background, high-contrast buttons.
2. Receipt Upload Module
   1. Upload Interface
      1. Create an Upload page with a “Drop image/text here” area and a “Browse” button.
      2. Support formats: .png, .jpg, .jpeg, .txt.
      3. Add a table below with columns: Receipt Name, Date, Status (Pending, Processing, Completed, Failed).
      4. Allow multiple uploads, with real-time status updates.
      5. Validate file formats and display error messages.
   2. Data Management
      1. Save uploaded receipt metadata (product name, quantity, price, market source, date).
      2. Restore uploaded data when reopening the app.
      3. Enable clicking on a receipt row to navigate to Analyze Screen.
3. Analyze Module
   1. Analyze Screen
      1. Display selected receipt as a table: Column 1 = Product Name, Column 2 = Quantity.
      2. Add an “Analyze” button at the bottom.
      3. AI parses product list and suggests cooking formulas.
      4. Prevent analysis if no receipt is active, showing an error message.
      5. Save analysis results into project storage.
   2. Edit & Interaction
      1. Allow editing product list with popup table: select box, product name, quantity.
      2. Provide options: Delete, Edit, Pin (prioritize ingredient), Share.
      3. Ensure selected ingredients are used as input for recipe generation.
4. Cooking Set & Cooking Time
   1. Cooking Set Screen
      1. Display AI-generated recipe options in a scrollable grid.
      2. Each item includes: Image, Title, Cuisine Type, Flavor Description, Nutrition Info.
      3. Clicking on an item navigates to Cooking Time Screen.
   2. Cooking Time Screen
      1. Show full recipe in text format: ingredients, step-by-step instructions, total time.
      2. Add a “Save Recipe” button.
      3. Allow sharing via text/email.
5. Profile & User Features
   1. Profile Screen
      1. Display saved recipes list with options to edit, remove, or share.
      2. Allow user to update account details: name, password, phone.
   2. Login Page
      1. Create Login Page with username, password fields, “Login” button.
      2. Add “Forgot Password” and “Sign Up” links.
      3. Mask password input for security.
      4. Save session data and restrict access until login is successful.