**Capstone 1 Proposal: Meal Planner App**

**Stack:**This application will use Flask and Python for the backend and a frontend built with HTML, CSS, and JavaScript to create a dynamic and responsive user experience. The backend will handle API requests, user authentication, and data management. PostgreSQL will serve as the database for meals planned, saved recipes, shopping list and customizations.

**Focus:**This is a full-stack application, with both frontend and backend functionality being the focus of the application. The backend will manage data storage, user sessions, and API requests for meals and recipes , while the frontend will provide an intuitive UI for searching, saving, and customizing meals based on dietary restrictions. Perhaps incorporating AI into the

**Type:**The application will be a responsive web app optimized for desktop and mobile access, enabling users to access their recipes and customizations from any device.

**Goal:**The goal of the app is to make recipe discovery, meal customization, and management easy for users. Key features include ingredient substitution based on dietary preferences or allergies and serving size adjustments, making the cooking experience more accessible and tailored.

**Users:**Target users include home cooks and fitness enthusiasts, particularly those with dietary restrictions or specific preferences, and individuals who need to adjust recipes for different serving sizes for weight management

**Data:**

* **Recipe Data:** Recipes will be sourced from an external API (Edamam), providing details on ingredients, instructions, and dietary filters.
* **User Data:** Stored preferences, saved recipes, and custom recipes will allow a personalized user experience.

**Approach Outline:**

1. **Database Schema:**
   * **Users:** saved recipes, dietary preferences, meals per day, weight, height, and gender for estimate of calorie intake.
   * **Recipes:** Recipe ID, title, ingredients, instructions, ratings, and tags.
   * **Substitutions:** Ingredient name and replacement options (e.g., egg -> applesauce for vegan).
   * **Ratings:** Recipe ID, user ratings, upvotes.
2. **API Integration and Potential Issues:**
   * Connecting to a recipe API will allow for data retrieval, but limitations might include incomplete dietary options or inconsistent ingredient data.
   * Handling variations in ingredient formats from the API may require additional parsing for consistency.
3. **Security Considerations:**
   * Sensitive user information will be protected using bcrypt for password hashing.
4. **Key Features:**
   * **Recipe Search and Discovery:** Users can search for recipes or discover random options.
   * **Serving Size Adjustment:** Automatically adjusts ingredient quantities based on desired servings.
   * **Recipe Management:** Users can save, edit, and add their own recipes.
   * **Customizable Options:** Users can modify ingredients and save dietary preferences.
5. **User Flow:**
   * **Home Page:** Displays questionnaire of persons name, age, weight, height, and gender.
   * **Recipe Page:** Shows recipe details with options for substitutions and serving size adjustments.
   * **Save & Edit:** Users can save recipes, make edits, and add notes.
   * **Trending Page:** Displays popular recipes based on user upvotes.
   * **Profile:** Allows users to view saved recipes, dietary preferences, and recent interactions.
6. **Beyond CRUD - Stretch Goals:**
   * **Substitution Data:** A database of ingredient substitutions will support quick modifications based on dietary preferences (such as vegan or gluten-free).
   * **Ratings and Trends:** A rating system will track popular recipes, allowing users to find trending dishes.
   * **Recommendation System:** Suggests recipes based on user preferences and past interactions.
   * **Grocery List Feature:** Generates a shopping list based on saved recipes and serving size adjustments.
   * **Comments Section:** Adds a feedback area for user discussions on each recipe.
   * **Visual Sharing:** Allows users to upload photos of their custom recipes.