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Nourish– Personalized Macro & Nutrient Tracker

Business Problem Scenario

Many health-conscious individuals struggle with tracking and balancing their nutrition accurately. Traditional calorie-tracking apps often focus only on calories and major macros, ignoring micronutrients, planning ahead, or saving meal templates, features that help maintain **consistency**.

Nourish provides a solution by allowing users to:

- Log meals by day and view total nutrient summaries.
- Save frequent meals and recipes for one-tap reuse.
- Plan meals ahead or revisit past days.
- Import recipes from websites and automatically calculate macros and nutrient breakdowns.

This helps users save time, reduce guesswork, and stay aligned with their health and fitness goals.

User Stories

As a user...

1. **Account & Setup**

   - I want to create an account and set my calorie and macro goals through an onboarding form so I can have personalized daily targets.
   - I want to log in securely.
   - See my nutrition dashboard after logging in.

2. **Daily Dashboard**

- I want to view my daily totals for calories, protein, carbs, fat, and fiber, along with vitamins and minerals, so I can track my intake easily.

- I want to select a date (past or future) to view or plan my meals for that day.

3. **Meal Management**

   - I want to add foods to each meal (breakfast, lunch, dinner, snacks) with grams and calories so I can track detailed intake.
   - I want to see per-meal summaries of macros to balance each meal effectively.
   - I want to edit or delete foods from any meal to keep my log accurate.

4. **Saved Meals / Templates**

   - I want to save commonly eaten meals (like *Danielle's Breakfast*) so I can quickly re-add them without entering each food item again.
   - I want to manage my saved meals (view, rename, delete).

5. **Recipe Import**

   - I want to import recipes from websites and automatically calculate macros per serving so I can understand the nutrition before cooking.
   - I want to save recipes I've entered manually for future use.

6. **Planning & Flexibility**

   - I want to plan meals for upcoming days so I can stay consistent even when meal prepping.
   - I want to edit meals in the past to update as I gain new information about meals.
   - I want my totals and goals to update automatically based on the selected date.

7. **Progress Tracking**

   - I want to see trends in my calorie and macro intake over time so I can track progress toward my goals.

Problem Solving Process

1. **Plan and Model Data**

   - Define relational models for users, meals, foods, and saved meals.

   - Establish ownership relationships between user and data.

2. **Build Backend (Flask)**

   - Scaffold API endpoints (CRUD for meals, foods, saved meals).

   - Add JWT authentication with secure route protection.

3. **Design Database (PostgreSQL)**

   - Use SQLAlchemy ORM and Marshmallow for schema management.

4. **Develop Frontend (React)**

   - Create pages: Login/Register, Dashboard, Saved Meals, Recipes.

   - Use Context API or Redux for user and meal state.
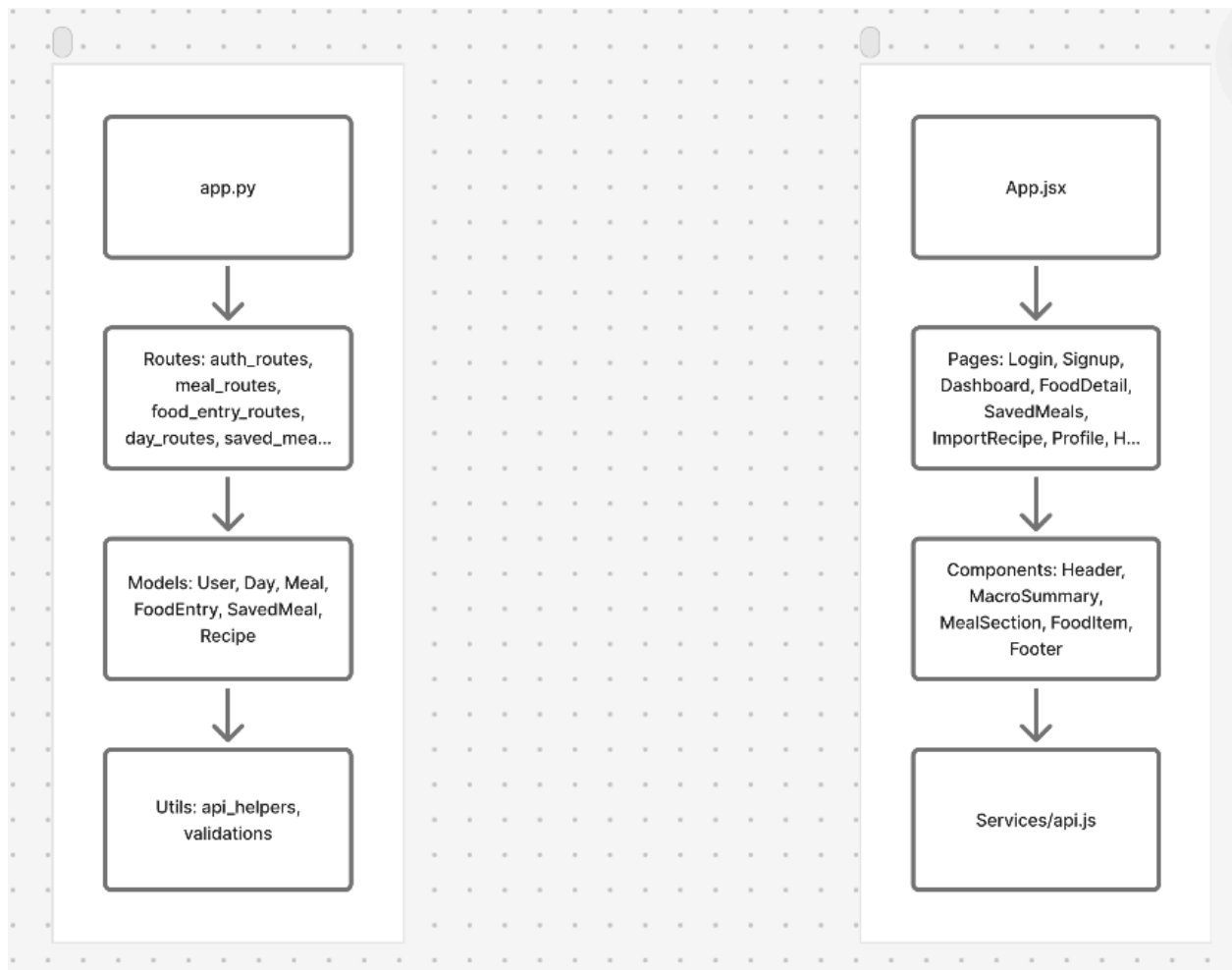
5. **Integrate Fetches**

   - Connect frontend to Flask API, handle JWT in requests.

6. **Add Advanced Features**

   - Saved meals, recipe importer, date-based filtering.

7. **Test, Polish, Deploy**

   - Style with Tailwind CSS, test CRUD/auth flows, and deploy on Render + Vercel.

Tools, Architecture, and Methodology

- **Backend:**
  Built with FlaskAPI for a lightweight, fast API framework.

- **Database:**
  PostgreSQL chosen for its reliability, scalability, and strong relational support for user-meal data.

- **Frontend:**
  Developed with React and Vite for modular, fast-loading components.

- **APIs:**
  Integrates Spoonacular for recipe parsing and automated macro/nutrition analysis and

OpenAi for AI suggestions.

- **Authentication:**
  Uses JWT tokens for secure, stateless login sessions between the Flask backend and React frontend.

- **Hosting:**
  Render for backend deployment and Vercel for frontend hosting, ensuring fast CI/CD and uptime.

Timeline and Scope

User Story	Points
Account & Setup	
Create an account and set calorie/macro goals through onboarding	5
Log in securely	5
See my nutrition dashboard after logging in	3
Daily Dashboard	
View daily totals for calories, macros, vitamins, and minerals	3
Select a date (past/future) to view or plan meals	5
Meal Management	
Add foods to meals with grams and calories	8
See per-meal summaries of macros	5

Edit or delete foods from meals	**3**
Saved Meals / Templates	
Save commonly eaten meals for quick re-add	**5**
Manage saved meals (view, rename, delete)	**5**
Recipe Import	
Import recipes from websites and auto-calculate macros per serving	**8**
Save manually entered recipes	**3**
Planning & Flexibility	
Plan meals for upcoming days	**3**
Edit meals in the past	**3**
Totals/goals update automatically based on selected date	**3**
Progress Tracking	
View trends in calorie/macro intake over time	**8**

Total points: 75