Hackathon Project Phases Template

Project Title:

Advancing Nutrition Science through Gemini AI

Team Name:

Team-Worries

Team Name:

- Kattamuri Sudheer
- K.Bhuvan Sathya
- Gadhe Harika
- Meghana Gumidelly
- Thota Harsha vardhan

Phase-1: Brainstorming & Ideation

Objective:

- Identify the problem statement.
- Define the purpose and impact of the project.

Key Points:

Problem Statement:
Advancing Nutrition Science through Gemini AI

Proposed Solution:
A chatbot to help people provide a balanced, nutritious and tasty food according to their needs by taking their prompt as input. It advices people having medical conditions or allergies to have recommended food and give alternative sources. It provides balanced diets, nutrition charts, and even generates different recipes with the given user inputs. It helps people to have nutritious meals and stay active in this busy world.

Target Users: It mainly targets:
- the people having medical conditions
- the people who lack nutritious meal due to their busy schedule

- The people who are trying to gain/lose weight
- For gym trainers/ celebrities/sports person etc
- For nutrition experts to advice the diets/meals to advice their clients

Expected Outcome:

This project will be able to help every person to have nutritious meals. This application will be used by every parent who want to provide their children a healthy meal. This will help people to keep track of their health. This project will make people realise the importance of having nutritious food. It helps people to differentiate between healthy food and unhealthy food.

Phase-2: Requirement Analysis

Objective:

- Define technical and functional requirements.

Key Points:

1. Technical Requirements:
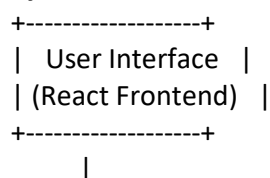2. Functional Requirements:
3. Constraints & Challenges:

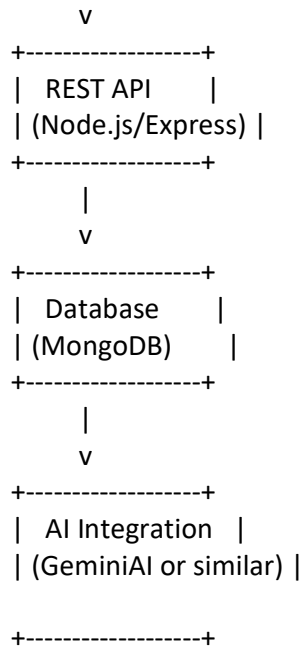Phase-3: Project Design

Objective:

- Create the architecture and user flow.

Key Points:

1. **System Architecture Diagram:**
   ```
   +-------------------+
   |   User Interface  |
   | (React Frontend)  |
   +-------------------+
            |
   ```

```
            v
 +-------------------+
 |   REST API        |
 | (Node.js/Express) |
 +-------------------+
          |
          v
 +-------------------+
 |   Database        |
 | (MongoDB)         |
 +-------------------+
          |
          v
 +-------------------+
 |   AI Integration  |
 | (GeminiAI or similar) |

 +-------------------+
```

2. **User Flow:** User navigates to the registration page.

   User fills out the registration form and submits it.

   User receives a confirmation message and is redirected to the dashboard**.**

   Dashboard Interaction:

   - User views their profile and meal plan.
   - User can navigate to the chatbot interface.

   Chatbot Interaction:

   - User types a question or request in the chatbot.
   - Chatbot processes the input and provides a response.
   - User can ask follow-up questions or request meal suggestions.

   Meal Plan Generation:

   - User can request a personalized meal plan based on their dietary preferences and health goals.
   - Chatbot provides meal suggestions.

3. UI/UX Considerations:

- Wireframe: A basic layout can be sketched as follows:
  - Registration Page: Form fields for user input (name, age, email, etc.).
  - Dashboard: Display user information, meal plans, and a button to access the chatbot.
  - Chatbot Interface: A chat window for user interaction with the chatbot.

Phase 4: Project Planning (Agile Methodologies)

Objective:

Break down the tasks using Agile methodologies.

Key Points:

1. Sprint Planning:

- **Sprint 1**: Set up the project structure and backend API.

- **Sprint 2**: Develop the frontend components (registration, dashboard, chatbot).

- **Sprint 3**: Integrate AI functionality and meal plan generation.

- **Sprint 4**: Testing and bug fixing.

Timeline & Milestones:

- **Sprint 1**: 3 hours

- **Sprint 2**: 2 hours

- **Sprint 3**: 3 hours

- **Sprint 4**: 1.5 hours

Phase 5: Project Development

Objective:

Code the project and integrate components.

Key Points:

1. Technology Stack Used:

- **Frontend**: React.js, Tailwind CSS

- **Backend**: Node.js, Express.js, MongoDB

- **AI Integration**: GeminiAI or similar API for food recognition and recommendations

2. Development Process:

1. Set up the project structure.

2. Develop the backend API for user registration and meal planning.

3. Create the frontend components for user interaction.

4. Integrate AI functionality for meal suggestions.

5. Conduct testing and debugging.

3. Challenges & Fixes:

- **Challenge**: Difficulty in integrating the AI API.

  - **Fix**: Consulted API documentation and implemented error handling.

- **Challenge**: Issues with state management in React.

  - **Fix**: Used React hooks effectively to manage state.

Phase 6: Functional & Performance Testing

Objective:

Ensure the project works as expected.

Key Points:

1. Test Cases Executed:

- User registration with valid and invalid data.

- Chatbot interaction with various prompts.

- Meal plan generation based on user preferences.

2. Bug Fixes & Improvements:

- Fixed issues with form validation on the registration page.

- Improved chatbot response handling for better user experience.

3. Final Validation:

- The project meets the initial requirements of user registration, meal planning, and chatbot interaction.

4. Deployment (if applicable):

- **Hosting Details**: Deployed the backend on Heroku and the frontend on Vercel.

- **Final Demo Link**: [Insert demo link here]