Hackathon Project Phases Template
Project Title:
Advancing Nutrition Science through GeminiAI
Team Name:
Dextures
Team Members:

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Phase-1: Brainstorming & Ideation
Objective:
To develop an AI-driven system that utilizes GeminiAI to analyze and optimize personalized nutrition plans based on user health data, dietary preferences, and scientific research.
Key Points:

1. **Problem Statement:**
   The growing need for personalized nutrition guidance often lacks accurate and data-driven recommendations. Many individuals struggle with selecting optimal diets that align with their health conditions, lifestyle, and scientific research.
2. **Proposed Solution:**
   - **Develop an AI-powered system leveraging GeminiAI to analyze user-specific data such as dietary habits, health conditions, and nutritional goals.**
   - **The system will provide real-time, evidence-based dietary recommendations personalized to users.**
   - **It will process user inputs locally without relying on cloud storage or external databases.**
3. **Target Users:**
   - **Individuals looking for personalized diet recommendations**
   - **Nutritionists and dietitians**
   - **Healthcare professionals**
   - **Fitness enthusiasts**
   - **Researchers in nutritional science**
4. **Expected Outcome:**
   - **An AI-powered nutrition assistant that provides customized meal plans, tracks user progress, and adapts to evolving health conditions.**
   - **The system will reduce nutritional deficiencies, promote healthier lifestyles, and support dietary adherence through AI-driven recommendations.**

Phase-2: Requirement Analysis
Objective:
To define the technical and functional requirements, ensuring alignment with user needs and industry standards.
Key Points:

1. **Technical Requirements:**
   - **Programming Language: Python**
   - **Backend: GeminiAI API, StreamLit**
   - **Processing: On-device AI model execution**
2. **Functional Requirements:**
   - **AI-based meal and nutrition recommendations**
   - **Real-time diet tracking and progress analysis**
   - **User input processing without cloud dependency**
3. **Constraints & Challenges:**
   - **Ensuring high accuracy in AI-generated meal plans**
   - **Handling large datasets efficiently on local storage**

- **Providing dynamic recommendations without cloud resources**

Phase-3: Project Design
Objective:
To create a structured system architecture and user experience flow.
Key Points:

1. **System Architecture Diagram: (Flowchart illustrating how GeminiAI processes data and generates nutrition recommendations)**
2. **Data Flow:**
   - **User inputs health and dietary preferences**
   - **AI analyzes data and provides recommendations**
   - **User tracks meals and updates progress**
   - **System refines suggestions based on ongoing data**

Phase-4: Project Planning (Agile Methodologies)
Objective:
To divide development tasks into manageable sprints and allocate responsibilities.
Key Points:

1. **Sprint Planning:**
   - **Sprint 1: AI Model Setup**
   - **Sprint 2: Backend Development**
   - **Sprint 3: Data Processing and Storage Implementation**
   - **Sprint 4: Testing and Refinements**
2. **Task Allocation:**
   - **AI Model Development**
   - **Backend & API Integration**
   - **Data Processing & Optimization**

Phase-5: Project Development
Objective:
To build and integrate all components of the project.
Key Points:

1. **Technology Stack Used:**
   - **Python, streamLit, GeminiAI API**
2. **Development Process:**
   - **Implement AI-based recommendation logic**
   - **Process user input using local file storage**
   - **Optimize AI model execution for real-time results**
3. **Challenges & Fixes:**
   - **Optimizing AI-generated recommendations for accuracy**
   - **Handling data efficiently without cloud storage**

Phase-6: Functional & Performance Testing
Objective:
To ensure the project functions as expected and meets all requirements.
Key Points:

1. **Test Cases Executed:**
   - **AI meal recommendations accuracy**
   - **Data processing from local file storage**
2. **Bug Fixes & Improvements:**
   - **Fixed incorrect diet suggestions for specific health conditions**
   - **Improved performance of local data handling**
3. **Final Validation:**
   - **Ensured alignment with initial problem statement and objectives**
