**Hackathon Project Phases Template** for the **AutoSage App** project.

# **Hackathon Project Phases Template**

## **Project Title:**

## **Fitsync Al: Real-Time Fitness Adjustments with LLaMA3**

## **Team Name:**

OXYGEN

## **Team Members:**

* J.Akshith
* M.Kushal
* M.Abhijeet
* K.Prashanth

## **Phase-1: Brainstorming & Ideation**

### **Objective:**

The project aims to develop FitSync AI, an interactive AI-powered fitness platform that provides personalized workout recommendations, real-time adjustments, and fitness tracking using Streamlit and LLaMA3. Users can engage in adaptive training plans, AI-driven posture correction, and data-driven fitness insights to optimize their workouts. The platform enhances user experience through interactive fitness dashboards, progress tracking, and gamified challenges to ensure motivation and continuous improvement.

### **Key Points:**

1. **Problem Statement:**
   * Traditional fitness apps lack real-time personalization, leading to ineffective workouts and potential injuries. FitSync AI leverages LLaMA3 and AI-driven analytics to provide adaptive workouts, liveposture correction, and intelligent fitness coaching for a truly personalized fitness experience.  
     Users also need guidance on vehicle maintenance and eco-friendly vehicle choices.
2. **Proposed Solution:**

* FitSync AI utilizes LLaMA3 and real-time AI analytics to deliver personalized fitness coaching, adaptive workout adjustments, and live posture correction based on user performance and biometric data. By integrating wearables, AI-driven tracking, and interactive dashboards, it ensures a safe, effective, and engaging fitness experience tailored to individual goals.

1. **Target Users:**
   * Fitness Enthusiasts & Athletes – Users seeking personalized, AI-driven workout plans and real-time adjustments to optimize performance.

* Beginners & Home Workout Users – Individuals needing AI-guided coaching, posture correction, and injury prevention without a trainer.
* Rehabilitation & Recovery Patients – Users requiring safe, adaptive workout modifications for progressive recovery and injury prevention.

1. **Expected Outcome:**

* **Real-Time AI Coaching** – Instant workout adjustments, posture corrections, and biometric-based feedback for optimized training.
  + **Personalized & Adaptive Workouts** – AI-driven plans that adjust intensity, exercises, and recovery based on user performance.
  + **Injury Prevention & Efficient Training** – AI ensures proper form, safe modifications, and fatigue-based recommendations to reduce injury risk.

## **Phase-2: Requirement Analysis**

### **Objective:**

### FitSync AI is to develop an AI-powered fitness assistant using LLaMA3 and real-time analytics to provide personalized workout plans, live posture correction, and adaptive training adjustments based on biometric data and user performance. The system will ensure a safe, effective, and engaging fitness experience by integrating wearables, AI tracking, and interactive coaching.

### **Key Points:**

1. **Technical Requirements:**
   * Programming Language: **Python**
   * Backend: **Google Gemini Flash API**
   * Frontend: **Streamlit Web Framework**
   * Database: **Not required initially (API-based queries)**
2. **Functional Requirements:**
   * Users can **set fitness goals, track progress, and update preferences**.
   * **Personalized workout plans** based on user input and biometric data.
   * AI **analyzes real-time performance and adjusts workouts accordingly**.
   * Users can **log workouts, track progress, and receive AI-generated insights**
3. **Constraints & Challenges:**

* Predefined Features vs. Real-Time AI Adaptation – Fixed tools like BMI calculator and workout plans contrast with the challenge of integrating LLaMA3 for dynamic fitness adjustments.
  + Structured Web Pages vs. User Engagement – Organized navigation helps usability, but keeping users motivated with interactive challenges remains a challenge.
  + Data Availability vs. Privacy Concerns – Collecting fitness data enables AI-driven insights, but ensuring secure storage and user privacy is crucial.

## **Phase-3: Project Design**

### **Objective:**

Develop the architecture and user flow of the application.



### **Key Points:**

1. **System Architecture:**
   * User enters vehicle-related query via UI.
   * Query is processed using **Google Gemini API**.
   * AI model fetches and processes the data.
   * The frontend displays **workout plan,Hydration,BMI Calculator,Smart Nutrition**
2. **User Flow:**
   * Step 1: User enters a query (e.g., "Best motorcycles under ₹1 lakh").
   * Step 2: The backend **calls the Gemini Flash API** to retrieve vehicle data.
   * Step 3: The app processes the data and **displays results** in an easy-to-read format.
3. **UI/UX Considerations:**
   * **Minimalist, user-friendly interface** for seamless navigation.
   * **Dark & light mode** for better user experience.
   * Clean layout, easy navigation, and one-tap access to workouts and tracking
   * AI-driven workout suggestions, real-time feedback, and gamification elements like challenges and rewards.

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## **Phase-4: Project Planning (Agile Methodologies)**

### **Objective:**

Break down development tasks for efficient completion.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Task** | **Priority** | **Duration** | **Deadline** | **Assigned To** | **Dependencies** | **Expected Outcome** |
| Sprint 1 | Environment Setup & API Integration | 🔴 High | 6 hours (Day 1) | End of Day 1 | Akshith | Python, Streamlit setup, LLaMA3 API | API connection established & working |
| Sprint 1 | Frontend UI Development | 🟡 Medium | 4 hours (Day 1) | End of Day 1 | Kushal | API response format finalized | Basic UI with input fields |
| Sprint 2 | Workout Tracking&Adjustments | 🔴 High | 3 hours (Day 2) | Mid-Day 2 | Kushal | API response, UI elements ready | Real-time AI-driven workout tracking |
| Sprint 2 | Smart Nutrition Module | 🟡 Medium | 3 hours (Day 2) | Mid-Day 2 | Akshith&  Prashanth | API data, User preferences | Improved API stability |
| Sprint 3 | Challenges & Gamification | 🔴 High | 3 hours (Day 2) | End of Day 2 | Abhijeet | User profiles, Workout data | Responsive UI, better user experience |
| Sprint 3 | Testing & UI Enhancements | 🟡 Medium | 2 hour (Day 2) | End of Day 2 | Entire Team | Fully working prototype | Fully working prototype |

### 

### **Sprint Planning with Priorities**

### **Sprint 1 – Setup & Integration (Day 1)**

**(🔴 High Priority)** Set up the **environment** & install dependencies.  
 **(🔴 High Priority)** Integrate **Google Gemini API**.  
 **(🟡 Medium Priority)** Build a **basic UI with input fields**.

### **Sprint 2 – Core Features & Debugging (Day 2)**

**(🔴 High Priority)** Implement **search & comparison functionalities**.  
 **(🔴 High Priority)** Debug API issues & handle **errors in queries**.

### **Sprint 3 – Testing, Enhancements & Submission (Day 2)**

**(🟡 Medium Priority)** Test API responses, refine UI, & fix UI bugs.  
 **(🟢 Low Priority)** Final **demo preparation & deployment**.

## **Phase-5: Project Development**

### **Objective:**

Implement core features of the AutoSage App.

### **Key Points:**

1. **Technology Stack Used:**
   * **Frontend:** Streamlit
   * **Backend:** Google Gemini Flash API
   * **Programming Language:** Python
2. **Development Process:**
   * Implement **API key authentication** and **Gemini API integration**.
   * Develop **vehicle comparison and maintenance tips logic**.
   * Optimize **search queries for performance and relevance**.
3. **Challenges & Fixes:**
   * **Challenge:** Delayed API response times.  
      **Fix:** Implement **caching** to store frequently queried results.
   * **Challenge:** Limited API calls per minute.  
      **Fix:** Optimize queries to fetch **only necessary data**.

## **Phase-6: Functional & Performance Testing**

### **Objective:**

To develop an **AI-powered fitness assistant** that provides **real-time workout adjustments, personalized nutrition plans, and progress tracking** using LLaMA3, enhancing user experience through **adaptive fitness recommendations and gamified challenges**.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test Case ID** | **Category** | **Test Scenario** | **Expected Outcome** | **Status** | **Tester** |
| TC-001 | Functional Testing | Start a workout session with AI guidance | AI should provide real-time feedback on posture. | ✅ Passed | shanwaz |
| TC-002 | Functional Testing | Query "Suggest a meal plan for muscle gain" | AI should generate a personalized meal plan | ✅ Passed | anwar |
| TC-003 | Performance Testing | AI should adjust workouts within 2 seconds | Adjustments should be applied quickly. | ⚠ Needs Optimization | Tester 3 |
| TC-004 | Bug Fixes & Improvements | Fix incorrect calorie tracking in Smart Nutrition | Data accuracy should be improved. | ✅ Fixed | Developer |
| TC-005 | Final Validation | Ensure UI is responsive across devices | UI should work on mobile & desktop. | ❌ Failed - UI broken on mobile | Tester 2 |
| TC-006 | Deployment Testing | Host the app on a cloud platform | App should be accessible online. | 🚀 Deployed | DevOps |

## **Final Submission**

1. **Project Report Based on the templates**
2. **Demo Video (3-5 Minutes)**
3. **GitHub/Code Repository Link**
4. **Presentation**