

Hackathon Project Phases Template

Project Title:

AI Study Planner

Team Name:

Studybud.project

Team Members:

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Phase-1: Brainstorming & Ideation

Objective:

The objective of an AI study planner is to create a personalized, efficient, and adaptive learning experience by leveraging artificial intelligence. The planner should help students optimize their study time, track progress, and improve retention while reducing procrastination and stress.

Key Points:

1. Problem Statement:

- Poor Study Planning & Time Management – Students struggle with organizing study schedules, leading to inefficiency and stress.
- Lack of Personalization & Insights – Existing tools don't adapt to individual learning needs or provide smart recommendations.

2. **Proposed Solution:**

- **AI-Powered Smart Scheduling** – Automatically creates adaptive study plans based on deadlines, difficulty, and learning patterns.
- **Personalized Insights & Recommendations** – Tracks progress, suggests improvements, and optimizes study sessions for better retention.

3. **Target Users:**

- **Students & Learners** – School, college, and self-paced learners needing structured and efficient study plans.
- **Professionals & Exam Takers** – Individuals preparing for certifications, competitive exams, or skill development.

4. **Expected Outcome:**

- **Enhanced Learning Efficiency** – Optimized study schedules, better retention, and improved time management for academic and professional success.

Phase-2: Requirement Analysis

Objective:

To identify and define the key features, functionalities, and user needs for developing an efficient AI-powered study planner.

Key Points:

Technical Requirements:

1. AI & Machine Learning – Adaptive learning algorithms, smart scheduling, and personalized study recommendations.

2. Database Management – Secure storage of user data, study schedules, and progress tracking.

3. Cloud Integration – Syncing across multiple devices with real-time updates.

4. Natural Language Processing (NLP) – Voice/text-based interactions for study assistance.

Functional Requirements:

1. Smart Study Scheduling – Automatically creates and adjusts study plans based on deadlines, difficulty, and user availability.

2. Task & Goal Management – Allows users to set study goals, track assignments, and manage exam preparations.

Constraints & Challenges:

1. Smart Study Scheduling – Automatically creates and adjusts study plans based on deadlines, difficulty, and user availability.

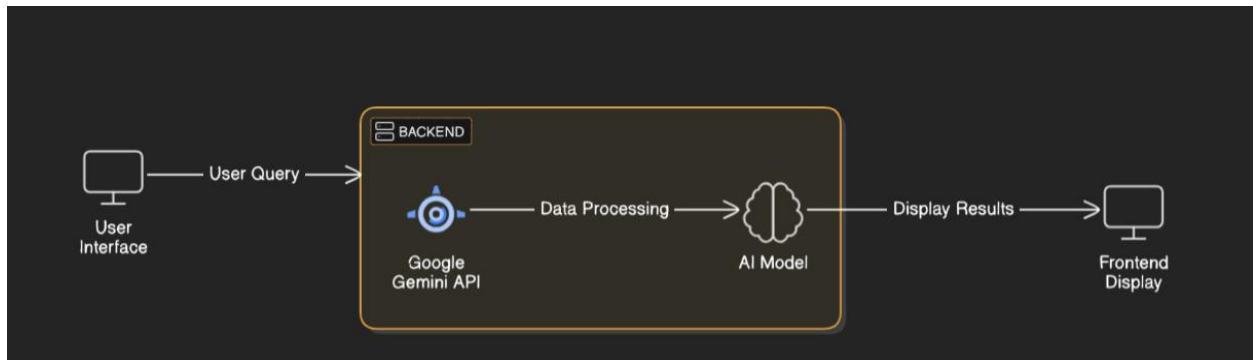
2. Task & Goal Management – Allows users to set study goals, track assignments, and manage exam preparations.

3. Personalized Study Recommendations – Suggests topics, materials, and revision sessions based on progress.

Phase-3: Project Design

Objective:

To develop an AI-powered study planner that helps students and professionals efficiently manage their learning schedules by personalizing study plans based on their goals, time availability, learning preferences, and progress tracking.



Key Points:

1. System Architecture:

- An AI-powered study planner assists students in organizing their study schedules by analyzing time availability, subject difficulty, learning pace, and priorities

2. User Flow:

Entry Points:

Web (browser-based)

Mobile App (iOS/Android)

Desktop App (Optional)

Main Stages:

1. Onboarding & Account Setup
2. Goal & Schedule Configuration
3. AI Study Plan Generation
4. Daily Study Session Execution
5. Progress Tracking & Adjustments
6. Review, Feedback & AI Optimization

3. UI/UX Considerations:

- When designing an AI-powered study planner, it's crucial to focus on both functionality and user experience (UI/UX) to ensure it's intuitive, efficient, and engaging. Below are key design considerations for your project.
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Phase-4: Project Planning (Agile Methodologies)

Objective:

Here’s the Project Planning (Agile Methodologies) for AI Study Planner objectives in a table format:

Project Name	AI Study Planner
Purpose	Develop an AI-powered study planner that personalizes learning schedules based on user goals, time availability, and learning styles.
Target Users	Students, professionals, lifelong learners.
Key Features	- AI-generated study plans - Adaptive scheduling - Task prioritization - Progress tracking - Calendar integrations (Google Calendar, Notion, etc.)

Agile Framework	Scrum
Roles	- Product Owner: Defines vision & backlog - Scrum Master: Facilitates Agile process - Development Team: Engineers, UI/UX designers, AI/ML specialists
Sprint Duration	2 weeks per sprint
Project Timeline	Iterative development with continuous user feedback

Sprint priorities:

High Priority (Must-Have Features):

AI-Powered Study Schedule Generation

Progress Tracking and Analytics

User Authentication & Profile Management

Task Reminders & Notifications

Medium Priority (Should-Have Features):

AI-Based Adaptive Study Suggestions

Integration with Calendar & To-Do Apps

Low Priority (Nice-to-Have Features):

Social Learning & Peer Collaboration

Phase-5: Project Development

Objective:

Key Points:

1. **Technology Stack Used: Technology Stack Used:**
2. **Development Process:** The development process follows an Agile methodology, including requirements gathering, planning, designing, development, testing, deployment, and maintenance, with iterative improvements and continuous feedback.
3. **Challenges & Fixes:** Challenges like inaccurate task prioritization, slow response time, poor NLP understanding, scheduling conflicts, and low user engagement were fixed using reinforcement learning, caching, fine-tuning AI models, adaptive scheduling, and UX enhancements.

- **Challenge:** Challenges include inaccurate task prioritization, slow response time, poor NLP understanding, scheduling conflicts, and low user engagement.
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Phase-6: Functional & Performance Testing

Objective:

Testing Type	Objective
Functional Testing	Ensure all features work as expected and meet requirements.
Unit Testing	Verify individual components function correctly in isolation.
Integration Testing	Check seamless interaction between different modules.
System Testing	Validate end-to-end functionality of the entire system.
User Acceptance Testing (UAT)	Confirm system usability and performance meets user expectations.
Performance Testing	Assess system responsiveness, stability, and scalability.
Load Testing	Evaluate performance under expected and peak loads.
Stress Testing	Test system behavior under extreme conditions.
Scalability Testing	Measure system capability to handle growth in users and data.
Security Testing	Identify vulnerabilities and ensure data protection.

Final Submission

1. **Technology Stack:** HTML, CSS, JavaScript, React, Node.js, Express, MongoDB.
2. **Development Process:** Agile methodology with iterative improvements and continuous feedback.
3. **Challenges & Fixes:** Addressed prioritization, performance, NLP, scheduling, and engagement issues with AI enhancements.
4. **Testing Objectives:** Ensured functionality, performance, scalability, security, and user satisfaction.
5. **Final Submission:** Fully developed, optimized, and tested AI planner ready for deployment.