

Project Title: StudBud: AI Personalized Study Planner

Team Name: SPY

Team Members:

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Phase-1: Brainstorming & Ideation

Objective:

Develop an AI-powered study planner using GPT-2 to generate personalized study plans based on student goals, strengths, weaknesses, and preferences.

Key Points:

1. Problem Statement:

- Many students struggle to create efficient study plans tailored to their needs.
- Generic study schedules do not cater to individual strengths, weaknesses, and learning styles.
- Lack of motivation and ineffective time management leads to suboptimal academic performance.

2. Proposed Solution:

- An AI-powered study planner that personalizes study schedules based on individual input.
- Utilizes **GPT-2** for generating high-quality, adaptive study plans.
- Integrates a **Gradio** interface for ease of use.

3. Target Users:

- High school and undergraduate students.
- Individuals preparing for competitive exams.
- Learners needing structured guidance for self-study.

4. Expected Outcome:

- A functional AI-powered study planner generating personalized study plans.
- User-friendly interface for easy input and plan retrieval.

Phase-2: Requirement Analysis

Objective:

Define the technical and functional requirements for StudBud.

Key Points:

1. Technical Requirements:

- **Programming Language:** Python
- **AI Models:** GPT-2 for plan generation
- **Frontend:** Gradio UI
- **Backend:** Flask or FastAPI (if needed for extensions)
- **Database:** Not required initially (text-based user inputs)

2. Functional Requirements:

- Accept user input (subjects, goals, strengths, weaknesses, and learning preferences).
- Generate a structured study plan dynamically.
- Display study plans in a user-friendly manner.
- Allow customization of study plans.

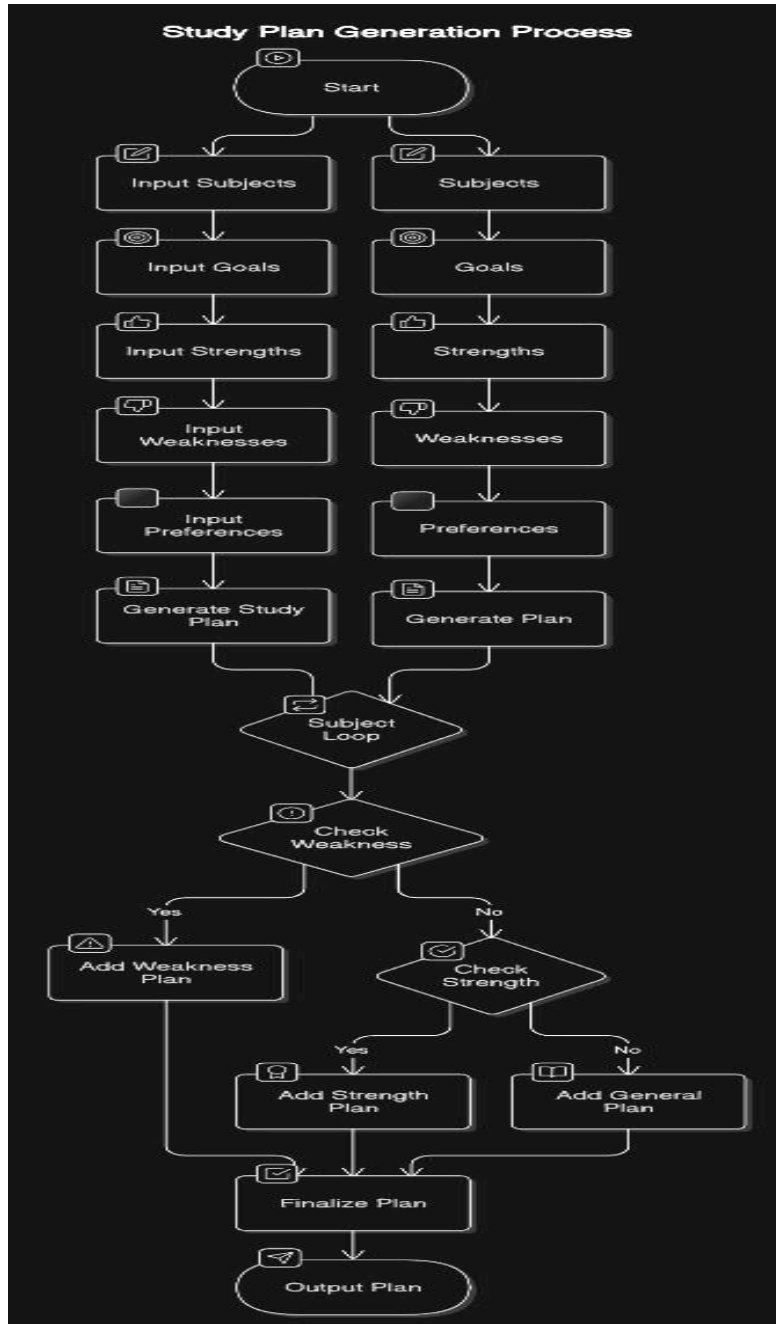
3. Constraints & Challenges:

- Ensuring generated plans are contextually accurate.
- Managing response time for AI-generated plans.
- Handling varied learning styles effectively.

Phase-3: Project Design

Objective:

Develop the architecture and user flow of the application.



Key Points:

1. System Architecture:

- User enters study-related input via UI.
- **GPT-2** generates a personalized study plan.
- Plan is formatted and displayed in the **Gradio** interface.

2. User Flow:

- Step 1: User enters subjects, goals, strengths, weaknesses, and preferred study method.
- Step 2: AI processes the inputs to generate a plan.
- Step 3: Personalized study plan is displayed with clear recommendations.

3. UI/UX Considerations:

- Simple and intuitive interface using Gradio.
- Clean study plan layout with emoji-based indicators.
- Interactive elements for modifying generated plans.

Phase-4: Project Planning (Agile Methodologies)

Objective:

Break down development tasks for efficient completion.

Sprint	Task	Priority	Duration	Deadline	Assigned To	Dependencies	Expected Outcome
Sprint 1	Environment Setup & API Integration	High	6 hours (Day 1)	End of Day 1	Member 1	Python, gradio setup	API connection established & working
Sprint 1	Frontend UI Development	Medium	2 hours (Day 1)	End of Day 1	Member 2	API response format finalized	Basic UI with input fields
Sprint 2	AI model integration and debugging	High	3 hours (Day 2)	Mid-Day 2	Member 1 & 2	API response, UI elements ready	AI based study plan generation
Sprint 2	Error Handling & Debugging	High	1.5 hours (Day 2)	Mid-Day 2	Member 1 & 4	API logs, UI inputs	Improved API stability
Sprint 3	Testing & UI Enhancements	Medium	1.5 hours (Day 2)		Member 2 &	API response, UI layout completed	Responsive UI, better user experience
Sprint 3	Final Presentation & Deployment	Low	1 hour (Day 2)	End of Day 2	Entire Team	Working prototype	Demo-ready project

Sprint Planning with Priorities

Sprint 1 – Setup & Integration (Day 1)

- Set up Python environment & dependencies.
- Implement BERT for user profiling.
- Build a basic UI with input fields.

Sprint 2 – Core Features & Debugging (Day 2)

- Implement GPT-2 for study plan generation.
- Debug incorrect responses and optimize AI outputs.

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

- Test AI-generated plans for accuracy.

- Refine UI and enhance responsiveness.
- Prepare final demo and deployment

Phase-5: Project Development

Objective:

Implement core features of StudBud.

Key Points:

1. Technology Stack Used:

- **Frontend:** Gradio
- **Backend:** AI models (GPT-2)
- **Programming Language:** Python

2. Development Process:

- Develop GPT-2-based study plan generation.
- Integrate Gradio for seamless user interaction.
- Optimize AI response times and accuracy.

3. Challenges & Fixes:

- **Challenge:** Study plans lacking coherence.
 - **Fix:** Fine-tune GPT-2 output format.
- **Challenge:** Delays in AI response.
 - **Fix:** Optimize prompt handling and reduce processing time.

Phase-6: Functional & Performance Testing Objective:

Ensure that the AutoSage App works as expected.

Test Case ID	Category	Test Scenario	Expected Outcome	Status
TC-001	Functional Testing	Enter input for a general study plan	Generates structured plan.	✓ Passed
TC-002	Functional Testing	Enter a subject with strengths and weaknesses	Adapts plan accordingly.	✓ Passed

TC-003	Performance Testing	API response time under 1 sec	AI should generate output quickly	⚠ Needs Optimization
TC-004	Bug Fixes & Improvements	Fix inaccurate recommendations.	Generates relevant content.	✓ Fixed
TC-005	Final Validation	Ensure UI is responsive across devices.	Works on mobile and desktop.	✗ Failed! needs fixing
TC-006	Deployment Testing	Deploy app using Gradio sharing	App is accessible online	Deployed

Final Submission

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