Project Title:

StudBud: AI Personalized Study Planner

Team Name:

FocusMate

Team Members:

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Phase-1: Brainstorming & Ideation

Objective:

Develop an AI-powered study planner that helps students create personalized study schedules using **BERT-based AI models** for intelligent plan generation.

Key Points:

Problem Statement:

- Students struggle with managing their study schedules effectively.
- Many lack a structured plan, leading to poor time management and inefficient study sessions.
- Existing study planners do not offer AI-driven adaptive learning schedules.

Proposed Solution:

- An AI-powered **study planner** that generates personalized study schedules based on user goals, deadlines, and priorities.
- Uses **BERT-based NLP** to analyze study objectives and recommend a structured plan.
- Provides **task management** to track progress and ensure accountability.

Target Users:

- Students preparing for **exams** (school, college, competitive exams).
- Professionals looking for a structured study plan for **skill development**.
- Individuals seeking **self-paced learning** with adaptive scheduling.

Expected Outcome:

- A functional **AI-powered study planner** with a user-friendly GUI.
- Seamless integration with **MySQL** to store tasks and study plans.
- Automated **study plan generation** based on user input.

Phase-2: Requirement Analysis

Objective:

Define the technical and functional requirements for StudBud.

Key Points:

Technical Requirements:

- **Programming Language:** Python
- **Frontend:** Tkinter (GUI)
- **Backend:** MySQL
- **AI Model:** BERT-based NLP for study plan generation
- **Database:** MySQL for storing tasks, plans, and user data

Functional Requirements:

- Allow users to **add, view, and complete study tasks**.
- Generate a **personalized study plan** based on user input.
- Store and retrieve **tasks & plans** from a MySQL database.
- Provide an intuitive **graphical interface** for easy interaction.

Constraints & Challenges:

- Ensuring **efficient NLP processing** with BERT.
- Handling **database queries** efficiently for multiple users.
- Providing a **user-friendly** and intuitive interface.

Phase-3: Project Design

Objective:

Develop the architecture and user flow for the StudBud application.

Key Points:

System Architecture:

1. **User enters** study goals and tasks.
2. AI processes the input using **BERT NLP**.
3. **Study plan is generated** and stored in MySQL.
4. The GUI displays **tasks, study plans, and completion status**.

User Flow:

1. **Step 1:** User inputs study goals and deadlines.
2. **Step 2:** AI processes the input and generates a schedule.
3. **Step 3:** The study plan is displayed with tasks sorted by priority.
4. **Step 4:** Users can **mark tasks as completed** and track progress.

UI/UX Considerations:

- **Simple, intuitive design** for easy navigation.
- **Task prioritization & progress tracking**.
- **Color-coded tasks** based on priority (High, Medium, Low).

Phase-4: Project Planning (Agile Methodologies)

Objective:

Break down development tasks into **sprints** for efficient completion.

Sprint	Task	Priority	Duration	Deadline	Assigned To	Dependencies	Expected Outcome
Sprint 1	Environment Setup & MySQL Integration	🔴 High	6 hours (Day 1)	End of Day 1	Member 1	MySQL, Python Setup	Database connection established
Sprint 1	GUI Development	🟡 Medium	3 hours (Day 1)	End of Day 1	Member 2	MySQL schema ready	Basic UI with input fields
Sprint 2	AI Study Plan Generation	🔴 High	4 hours (Day 2)	Mid-Day 2	Member 3	BERT NLP Model Setup	AI-generated study plan
Sprint 2	Task Management Features	🔴 High	3 hours (Day 2)	Mid-Day 2	Member 4	MySQL CRUD Operations	Add/view/update tasks
Sprint 3	Error Handling & Debugging	🟡 Medium	2 hours (Day 2)	Mid-Day 2	Member 1 & 4	API logs, UI inputs	Stability improvements
Sprint 3	Final Testing & Deployment	🟢 Low	2 hours (Day 2)	End of Day 2	Entire Team	Working prototype	Ready for demo

Phase-5: Project Development

Objective:

Implement the core features of StudBud.

Key Points:

Technology Stack Used:

- **Frontend:** Tkinter (Python GUI)
- **Backend:** MySQL
- **Programming Language:** Python
- **AI Model:** BERT (NLP-based study plan generation)

Development Process:

- **Connect MySQL database** for storing tasks & plans.
- Implement **task management features** (Add, View, Complete).
- Develop **AI-driven study plan generation** using BERT.
- Optimize **user interface** for better experience.

Challenges & Fixes:

Challenge	Fix
Slow AI response time	Optimized BERT model execution
UI responsiveness issues	Improved Tkinter layout management
SQL query performance	Added indexes for faster retrieval

Phase-6: Functional & Performance Testing

Objective:

Ensure that StudBud functions correctly and efficiently.

Test Case ID	Category	Test Scenario	Expected Outcome	Status	Tester
TC-001	Functional Testing	Add new study task	Task should be added to database	✅ Passed	Member 1
TC-002	Functional Testing	Generate study plan	AI should return a structured plan	✅ Passed	Member 2
TC-003	Performance Testing	AI response time under 500ms	AI should generate results quickly	⚠ Needs Optimization	Member 3
TC-004	Bug Fixes	Fix incorrect task deletions	Task should not disappear unexpectedly	✅ Fixed	Developer
TC-005	UI Validation	Check GUI responsiveness	UI should work on all screen sizes	❌ Needs Improvement	Member 4
TC-006	Deployment Testing	Run final executable file	App should work without errors	🚀 Ready	DevOps