Project Title: AI STUDY PLANNER

Team Name: AI Study Planner

Team Members:

➔ P Nagarjuna

➔ C Rakesh Goud

➔ V Ravi Varma

Phase-1: Brainstorming & Ideation

Objective:

- Identify the problem statement.
- Define the purpose and impact of the project.

Key Points:

1. **Problem Statement:** Students struggle to manage study schedules, maintain focus, and track progress efficiently.
2. **Proposed Solution:**
    - An AI-powered web app that assists students in creating, managing, and tracking study tasks.
    - Includes AI-based smart suggestions for study plans.
    - A built-in timer for focused study sessions.
    - Face detection to track attention levels and automatically pause the session if no face is detected.
3. **Target Users:** Students and professionals preparing for exams.
4. **Expected Outcome:** Improved time management, increased productivity, and an AI-driven structured approach to studying.

Phase-2: Requirement Analysis

Objective:

- Define technical and functional requirements.

Key Points:

1. **Technical Requirements:**
    - HTML, CSS, JavaScript for front-end development.
    - LocalStorage for data persistence.
    - MediaPipe Face Detection API for attention tracking.
    - No external frameworks required.
2. **Functional Requirements:**
    - Add, remove, and prioritize study tasks.
    - AI-based study plan generation from learning goals.
    - Timer with pause/resume functionality.
    - Automated session pausing when attention is lost.
    - Session summary with completed tasks and total study time.
3. **Constraints & Challenges:**
    - Limited AI capabilities for real-time adaptive study plans.
    - Ensuring smooth face detection performance without lag.
    - Browser compatibility for LocalStorage and webcam access.

Phase-3: Project Design

Objective:

- Create system architecture and user flow.

Key Points:

1. **System Architecture:**
    - HTML: Structure for dashboard, study session, and modals.
    - CSS: Responsive styling with gradient themes and priority-based colors.
    - JavaScript: Handles task management, AI suggestions, timer logic, and face detection.
    - LocalStorage: Persistent storage for study tasks.
2. **User Flow:**
    - User adds tasks or enters a goal.
    - AI generates a study plan based on the input.
    - User starts a study session, tracked with a timer and face detection.
    - The session automatically pauses if the user is not detected.
    - A summary is displayed at the end of the session.
3. **UI/UX Considerations:**
    - Clean, minimalistic design with a gradient header.
    - Responsive grid layout for desktop and mobile.
    - Color-coded task priorities (red for high, orange for medium, green for low).
    - Clear visual indicators for task status and session progress.

Phase-4: Project Planning (Agile Methodologies)

Objective:

- Break down tasks using Agile methodologies.

Key Points:

1. **Sprint Planning:**
    - **Sprint 1 (2 hours):** Build HTML structure and basic CSS.
    - **Sprint 2 (3 hours):** Implement task management and LocalStorage.
    - **Sprint 3 (3 hours):** Add AI suggestions, face detection, and study timer.
    - **Sprint 4 (2 hours):** Finalize UI, optimize performance, and test functionality.
2. **Task Allocation:**
    - **Nagarjuna:** HTML structure and CSS styling.
    - **Rakesh Goud:** Task management logic and LocalStorage.
    - **Ravi Varma:** AI suggestions and face detection implementation.
    - **Team:** Timer logic, session management, and final integration.
3. **Timeline & Milestones:**
    - **Hour 1-2:** Basic UI completed.
    - **Hour 3-6:** Core functionality (tasks, AI, face detection) implemented.
    - **Hour 7-8:** Final testing and UI improvements.

Phase-5: Project Development

Objective:

- Code the project and integrate all components.

Key Points:

1. **Technology Stack Used:**
    - HTML5, CSS3, vanilla JavaScript.
    - LocalStorage for task persistence.
    - MediaPipe Face Detection API for tracking user attention.
2. **Development Process:**
    - Built a structured dashboard and session interface.
    - Implemented task CRUD operations and AI study suggestions.
    - Developed a countdown timer with pause/resume functionality.
    - Integrated face detection to monitor attention and auto-pause sessions.
3. **Challenges & Fixes:**
    - **Challenge:** Timer accuracy when pausing/resuming.
    - **Fix:** Adjusted start time calculation after pauses.
    - **Challenge:** Ensuring smooth face detection performance.
    - **Fix:** Optimized detection frequency to balance accuracy and performance.

Phase-6: Functional & Performance Testing

Objective:

- Ensure the project works as expected.

Key Points:

1. **Test Cases Executed:**
    - Adding/removing tasks updates the list and LocalStorage.

- AI generates relevant study plans from learning goals.
- Timer counts down accurately and pauses/resumes correctly.
- Face detection auto-pauses and resumes the session as intended.
- Session summary displays completed tasks and total time.

2. **Bug Fixes & Improvements:**
   - Fixed timer reset issue after pausing.
   - Improved suggestion variety by refining AI templates.
   - Adjusted CSS for better mobile responsiveness.
3. **Final Validation:**
   - Meets all functional requirements.
   - User-friendly interface and seamless experience.
4. **Deployment:**
   - Hosted on GitHub Pages with a live demo link: https://github.com/goudr554/studyplanner.

Final Submission

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