A Project Proposal

On

MENTEXA:

Mental Health Self-Test Portal

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Chapter 1: Introduction

1.1 Introduction

Mentexa with a simplicity, privacy, and accessibility principle is a solution for your mental health care.In today's fast-paced and digitally connected world, mental health challenges such as stress, anxiety, and depression are becoming increasingly common- especially among students and young adults. Unfortunately, many individuals avoid seeking professional help due to stigma, lack of awareness, or limited access to mental health resources. This project aims to address that gap by developing a **Mental Health Self-Test Portal**, a fully frontend-based interactive website that allows users to anonymously take self-assessment quizzes and receive basic feedback and wellness tips.

This portal promotes mental health awareness and self-care by providing a simple and user-friendly interface using **HTML5, CSS, and JavaScript** (without external libraries). Although not a diagnostic tool, it acts as a first step toward recognizing early signs of mental distress and encouraging users to take their mental well-being seriously.

The project is fully aligned with the academic requirements outlined for second-semester web development coursework and includes the following key components:

- Static multi-page structure built using HTML5.
- CSS-based styling and image gallery to enhance user experience and visual appeal.
- Responsive design using the box model to ensure accessibility across devices.
- Interactive self-test form with input validation using JavaScript.
- User login form with real-time feedback and validation. (Simulated login system with basic validation using JavaScript to restrict access to the Mood History section.)
- Simulated jQuery-style image slider and gallery using vanilla JavaScript to display a rotating carousel of motivational images or mood-related illustrations for enhanced user engagement.
- Mood Tracker module:Allows users to select their mood for the day (happy, sad, anxious, calm, etc.). Displays mood history in a simple calendar or table format.

- JavaScript date picker and sorting for mood entries.
- Uses Fetch API to simulate AJAX requests from local JSON data for quiz questions or mood suggestions.
- Includes a conceptual overview of modern frontend frameworks like React, Angular, and Vue.js (for theoretical understanding only).

Overall, *Mentexa* serves as a foundational project that bridges technology and mental health awareness, empowering users to take the first step toward emotional well-being. By combining core frontend technologies with interactive features and educational elements, this portal not only fulfills academic objectives but also contributes meaningfully to addressing real-world mental health challenges. Through this initiative, the project aspires to foster empathy, self-awareness, and digital well-being among its users.

1.2 Problem statement

Mental health issues are rising, yet many avoid seeking help due to stigma or lack of access. There's a need for a simple, private, and accessible tool for early self-awareness. This project addresses that gap by creating a frontend-only Mental Health Self-Test & Mood Tracker Portal using HTML, CSS, and JavaScript, encouraging mental wellness through self-assessment and mood tracking.

1.3 Objectives

- Design a responsive, frontend-only website for mental health self-assessment and mood tracking.
- Use HTML, CSS, and JavaScript only - no external libraries or backend technologies.
- Provide interactive self-tests for depression and anxiety with immediate feedback.
- Include motivational and mental health tips to encourage emotional well-being.
- Implement a daily mood tracker to let users log and view their mood over time.

- Implement a simulated login system using JavaScript and localStorage to restrict access to the Mood History section.
- Ensure the platform is user-friendly, accessible, and informative, especially for students and young adults.
- Promote mental health awareness and self-care through engaging design and features.

Overall, the project aims to empower users with a simple, interactive tool that encourages self-awareness and supports mental well-being through technology.

1.4 Development Methodology

The development of Mentexa follows a structured, frontend-focused and prototype-driven methodology, ensuring the platform is user-friendly, responsive, and addresses real-world mental health awareness needs. The process emphasizes iterative refinement and a user-centered design approach, leveraging only HTML, CSS, and JavaScript.

i. Planning and Requirements Gathering

The project begins by identifying the key objectives and features based on user needs, mental health research, and platform feasibility. Core functionalities such as a mental health self-test, daily mood logging, motivational tips, and a login-restricted mood history tracker are defined. Documenting these requirements ensures a focused development process aligned with user wellness goals and project guidelines.

ii. Design and Prototyping

Initial low-fidelity wireframes and UI mockups are created to define page layouts, user flow, and interactivity. The design phase prioritizes simplicity, accessibility, and emotional appeal using calm visuals and intuitive interfaces. These prototypes are refined iteratively based on personal review and potential peer feedback, improving clarity, layout consistency, and user engagement.

iii. Development

Development focuses on implementing the static site using semantic HTML, custom CSS, and vanilla JavaScript. Key components like form validation, interactive quizzes, mood selection, and local storage-based login simulation are prioritized. The mood tracker and motivational tip system are built using local JSON data and Fetch API to simulate dynamic behavior. Special attention is paid to responsiveness, interactivity, and data persistence using browser storage.

iv. Testing and Debugging

Testing is embedded throughout development. Functionality of forms, mood tracking, quiz scoring, and login access control are tested in various scenarios to ensure proper behavior. Debugging is performed using browser developer tools and manual walk-throughs. Peer-based user acceptance testing validates usability and flow, guiding further refinements before presentation.

v. Presentation/Review

Once the platform is functionally complete, a walk-through is presented to academic supervisors, showcasing key features including the self-test, mood tracker, motivational tips, and login-protected mood history. Feedback from the review process is carefully considered to ensure the platform aligns with both technical requirements and user expectations.

vi. Maintenance and Iteration

Post-presentation, the project undergoes final revisions based on supervisor feedback. Refinements may include UI polish, improved interactivity, or additional frontend enhancements. This iterative process ensures Mentexa evolves into a refined, user-focused platform that not only demonstrates core web development skills but also delivers real-world value in promoting mental wellness.

Chapter 2: Methodology

2.1 Requirement Identification and Feasibility Study

Before development began, key requirements for the *Mentexa* project were identified through observation, basic user expectations, academic guidelines, and preliminary mental health research. The portal was designed for students and young adults who need a private, user-friendly platform to assess and reflect on their mental well-being.

Functional Requirements Identified:

- Self-test quizzes with anonymous participation
- Mood tracker with daily mood logging
- Motivational image slider/gallery
- Basic user registration with simulated login
- Responsive interface accessible on desktop and mobile
- Mood history accessible only after login

Non-Functional Requirements:

- Simple, intuitive, and emotionally calming design
- Fast performance without backend dependencies
- Frontend-only architecture for academic alignment

Feasibility Study:

- **Technical Feasibility:** The project is built using basic web technologies- HTML5, CSS3, and JavaScript - without any external frameworks or backend servers. All features are achievable through client-side programming.
- **Economic Feasibility:** The project requires no additional costs as all development tools are open-source and run locally in a browser.
- **Operational Feasibility:** Users (students, faculty, or individuals) can easily operate the system due to its clean interface, clear prompts, and helpful tooltips.

- **Time Feasibility:** The project is planned to be completed within one academic semester, following a weekly development and testing plan.

2.2 Literature Review / Related Work

With the growing prevalence of mental health concerns - especially among students and young adults - digital solutions have become an essential supplement to traditional mental health care. Research shows that digital self-assessment tools, mood tracking apps, and online wellness platforms can positively influence early mental health intervention when used responsibly and ethically.

Digital Mental Health Tools:

The World Health Organization (WHO, 2022) recognizes mental health as a crucial component of overall health and emphasizes early intervention and access to resources. Unfortunately, many people hesitate to seek help due to stigma, cost, or accessibility challenges. Studies suggest that digital tools can help bridge this gap, offering accessible and anonymous first steps toward care (Andersson & Titov, 2014).

Existing Applications:

Several applications have already tapped into digital mental health, such as:

- **Moodpath**: A mobile mental health companion that guides users through self-reflection and screening, but requires account creation and stores user data on servers.
- **Sanvello**: Combines self-care techniques with community support and therapy access, yet limits access to features unless users subscribe or provide personal data.
- **Youper**: AI-powered emotional health assistant, offering chat-based CBT (Cognitive Behavioral Therapy), but again dependent on data-driven systems.

While these applications are effective, most rely on **backends, user data, and app-based delivery**. This introduces privacy concerns and complexity for those who want a lightweight, anonymous, and browser-based alternative.

Relevance to Mentexa:

Mentexa distinguishes itself by providing a **frontend-only, fully anonymous mental wellness portal** that works on any browser without collecting or storing user data externally. It uses vanilla JavaScript, HTML, and CSS - making it ideal for educational use and practical demonstrations without backend complexity.Unlike Moodpath, Sanvello, and Youper, which rely on backend servers and user data collection, Mentexa ensures complete privacy by operating solely in the browser with local storage, making it ideal for users wary of data sharing.

Academic Support:

- Digital interventions can reduce symptoms of anxiety and depression, particularly when users engage regularly with simple, self-guided tools (Firth et al., 2017).
- Research highlights the effectiveness of mood tracking in promoting emotional awareness and behavior change (Baumel et al., 2019).
- Studies also show that *simplicity, privacy, and accessibility* are key design elements for mental wellness tools targeting younger populations (Kumar et al., 2021).

By addressing these needs, Mentexa acts as a **stepping stone for students to reflect on their mental state**, access motivational content, and build self-awareness - all without requiring login-based platforms or risking personal privacy.

2.3 Analysis and Design Tools

The development process included both conceptual and low-fidelity design planning to ensure user flow and layout consistency.

Design Tools Used:

- **Wireframes & UI Sketching:** Low-fidelity sketches were drawn using pen and paper and later digitized using [optional: tools like Figma or Balsamiq]. These sketches laid out the homepage, quiz form, mood tracker, gallery, and login UI.
- **Flowcharts:** Logical flow diagrams were prepared to understand the page navigation (Home → Self-Test → Result → Login → Mood History).
- **User Flow Analysis:** Mapped common actions like quiz completion, mood logging, and login simulation to improve usability.

2.4 Implementation Tools

Since the project strictly follows a frontend-only approach, the following development tools and technologies were used:

Tools/Technology	**Purpose**
HTML5	Structure and semantic content of web pages
CSS	Styling, layout (Box Model), responsive design
Vanilla JavaScript	Interactivity, form validation , image slider, mood tracker logic
LocalStorage	Simulated login session and mood history storage
Fetch API	Simulated AJAX calls to fetch JSON data (eg., quiz questions, mood tips)
VS Code	Code editing environment with live preview extension

Chapter 3: System Design

3.1 Overview

The system design of Mentexa outlines the architectural structure and interaction of various components within the frontend-based mental health self-assessment portal. Since this is a purely client-side system, emphasis is placed on component interaction, data flow, and user experience within the browser environment.

3.2 System Architecture (Frontend-Only)

- Single-Tier Architecture: All operations—UI rendering, data processing, and storage—occur in the browser using HTML, CSS, and JavaScript.
- No backend/server interaction: Data is stored and managed using localStorage.

3.3 Main Components

- Home Page: Landing page introducing Mentexa and linking to other modules.
- Self-Test Module: Users select quiz type (Anxiety/Depression). Scrollable question form.JavaScript scores responses and provides feedback.
- Mood Tracker: Mood selection interface. Saves mood data with date in localStorage. Displays history in table/calendar format.
- Login/Register Simulation: Simulated login using local JS validation. Controls access to mood history.
- Image Slider: Motivational images rotate using vanilla JS. (In home page)
- About Us Page: Displays project background and developer information.

3.4 Data Flow

- User interactions (form inputs, quiz responses, mood selections) → Processed by JavaScript → Saved/displayed using DOM and localStorage.
- Fetch API simulates AJAX calls to retrieve data from local JSON files (for quizzes, tips, etc.).

3.5 Storage Design

- User Data: Simulated user credentials (for login) stored locally (non-secure, for demo purposes).
- Mood Entries: Stored as JSON objects in localStorage keyed by date.
- Quiz Scores: Not stored—results are shown immediately post-submission.

3.6 Design Principles

- Modular Design: Each feature is implemented in a separate file or function for clarity.
- Responsive Layout: Flexbox and box model ensure usability across devices.
- Validation & Feedback: Real-time form validation and result display for quizzes enhance interactivity.

Chapter 4: Expected Outcome

The expected outcome of this project is a fully functional, frontend-only mental health self-test and mood tracking portal that:

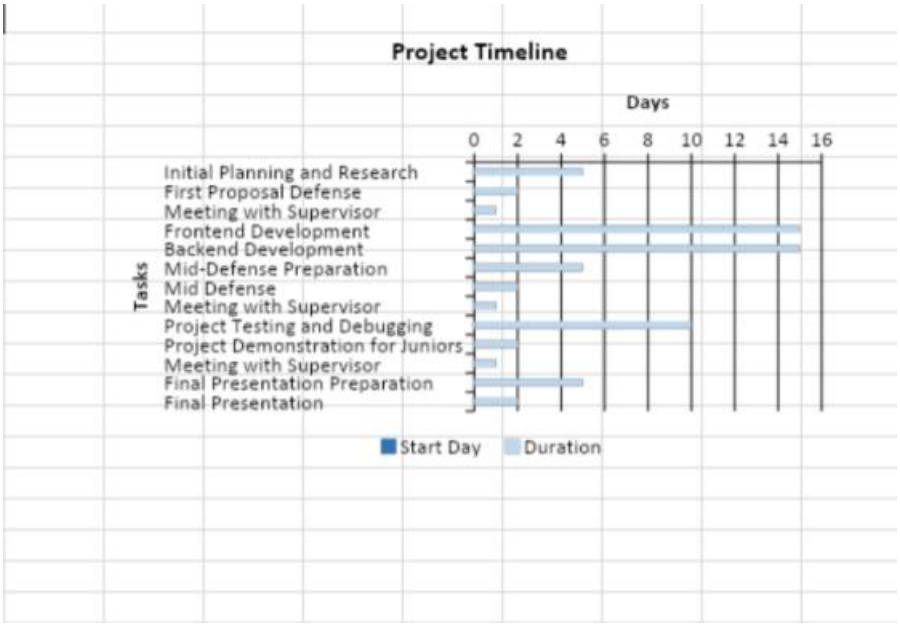
- Allows users to choose and take self-assessment quizzes for depression or anxiety.
- Provides instant feedback based on quiz answers using JavaScript logic.
- Lets users track their daily mood, with entries stored and displayed in a simple history format.
- Simulates a login system to restrict mood history access, enabling access to mood history securely in a frontend-only environment.
- Displays motivational images through a rotating slider built with vanilla JavaScript.
- Promotes mental health awareness through interactive and user-friendly design.
- Works smoothly on all devices, using responsive layouts and clean interfaces.

Overall, the project will demonstrate essential frontend development skills while creating a meaningful tool that encourages emotional well-being and self-awareness.

Chapter 5: Project Schedule

5.1 Gantt chart

Task	Start Day	Duration (Days)	End Day
Initial Planning and Research	Day 1	5	Day 5
First Proposal Defense	Day 7	2	Day 8
Meeting with Supervisor	Day 10	1	Day 10
Frontend Development	Day 12	15	Day 26
Backend Development	Day 28	15	Day 42
Mid-Defense Preparation	Day 44	5	Day 48
Mid Defense	Day 50	2	Day 51
Meeting with Supervisor	Day 53	1	Day 53
Project Testing and Debugging	Day 55	10	Day 64
Project Demonstration for Juniors	Day 66	2	Day 67
Meeting with Supervisor	Day 69	1	Day 69
Final Presentation Preparation	Day 71	5	Day 75
Final Presentation	Day 77	2	Day 78



Chapter 6: References

[1]World Health Organization (WHO). *Mental Health*. Retrieved from https://www.who.int/health-topics/mental-health

[2]American Psychological Association (APA). *Depression and Anxiety Statistics*. Retrieved from https://www.apa.org/topics/anxiety

[3]Duckett, J. (2014). *HTML and CSS: Design and Build Websites*. Wiley.

[4]Freeman, E., Robson, E., Bates, B., & Sierra, K. (2014). *Head First JavaScript Programming*. O'Reilly Media.

[5]Mozilla Developer Network (MDN Web Docs). *JavaScript Documentation*. Retrieved from https://developer.mozilla.org/en-US/docs/Web/JavaScript

[6]W3Schools. *HTML, CSS, JavaScript Tutorials*. Retrieved from https://www.w3schools.com

[7]GeeksforGeeks. *Image Slider in JavaScript*. Retrieved from https://www.geeksforgeeks.org/image-slider-using-html-css-and-javascript/

[8]Khan Academy. *Intro to JS: Drawing & Animation*. Retrieved from https://www.khanacademy.org/computing/computer-programming

[9]Anxiety and Depression Association of America (ADAA). *Screening Tools for Anxiety and Depression*. Retrieved from https://adaa.org/screening-generalized-anxiety-disorder-gad

[10]Patient Health Questionnaire (PHQ-9) and Generalized Anxiety Disorder Scale (GAD-7). Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). *A Brief Measure for Assessing Generalized Anxiety Disorder: The GAD-7*. Archives of Internal Medicine, 166(10), 1092–1097. DOI: 10.1001/archinte.166.10.1092