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Web Technologies Final Project

Framing Template for Mindful Journal Web Application

1. Introduction

Project Name: Mindful Journal Web Application

Objective:

The Mindful Journal Web Application allows users to record, edit, organize, and view journal entries securely. The project emphasizes a modern design, robust backend, and smooth validations for enhanced user experience.

Key Features:

- User-friendly interface with a responsive design.
- CRUD operations for managing journal entries.
- JavaScript and PHP-based validation for reliable data input.
- Insights and analytics on journal entries for users.

2. System Architecture

Tech Stack:

- Front-End: HTML, CSS, JavaScript.
- Back-End: PHP.
- Database: MySQL.
- Hosting: Application deployed on a live server.

System Interaction Diagram:

The system consists of three main layers:

1. User Interface: Handles user interactions and requests.

2. Backend Server: Processes requests, manages database operations, and handles validation.

3. Database: Stores user data and journal entries.

3. Application Features

User Interface:

- Clean, minimalistic, and responsive design.
- Intuitive forms for adding and editing journal entries.

Functionalities:

- Add: Users can create new journal entries with a title and content.
- View: All entries are displayed in reverse chronological order.
- Edit: Modify existing entries through a simple form.
- Delete: Remove unwanted entries.

Validations:

- Front-End (JavaScript):
- Title field: Required, with a minimum of 3 characters.
- Content field: Required, with at least 10 characters.
- Back-End (PHP):
- Regex-based validation for data consistency.
- Additional checks to prevent SQL injection.

4. Backend Implementation

Programming Language: PHP

Features:

- CRUD functionality implemented using structured PHP.
- Modular code for easy maintenance and scalability.

Key PHP Functions:

- createEntry($title, $content): Inserts a new journal entry into the database.
- getEntries(): Fetches all journal entries.
- updateEntry($id, $title, $content): Updates an existing entry.
- deleteEntry($id): Deletes an entry based on its ID.

5. Data Analytics

Insights Provided:

- Total number of journal entries.
- Filter entries based on mood and date.
- Mood tracking.

Implementation:

Data analytics are calculated dynamically using PHP queries on the database and displayed as simple metrics at the top of the dashboard.

6. Deployment

Hosting Platform:

The application is hosted on a live server, accessible via the URL below:

http://169.239.251.102:3341/~nyameye.akuamoah/Webtech_Final/

7. Challenges and Lessons Learned

Challenges Faced:

- Ensuring form validation worked seamlessly between JavaScript and PHP.
- Debugging issues with server configuration for live deployment.

Lessons Learned:

- Importance of clean, modular code to simplify debugging.
- The necessity of robust back-end validation to secure user data.

8. Conclusion

The Mindful Journal Web Application successfully fulfills the primary objective of enabling users to manage journal entries efficiently. The project demonstrates the integration of front-end and back-end technologies to create a responsive and functional application. Future enhancements could include:

- Adding user authentication for personalized journal access.
- Advanced analytics, such as sentiment analysis of journal content.

Appendix

- SQL File: [Attached as database.sql]
- Video Demo: https://youtu.be/iuLZ7uS8XnQ

- Live Server URL: http://169.239.251.102:3341/~nyameye.akuamoah/Webtech_Final/