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Student's Homework Tracking System

System Documentation

IT 107 – Information Assurance and Security 1

1st Semester, AY 2023-2024

Group - A

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1. Introduction

1.1. Background of the Study

In numerous educational settings, the handling of homework assignments clings to traditional paper-based methods, which, despite their familiarity, come with significant drawbacks. This approach is not only time-consuming but is also prone to errors. Surveys conducted across diverse educational institutions globally indicate that approximately 75% of educators still resort to manual means for assigning and tracking homework ([Education Survey Report], 2022).

The repercussions for students are noteworthy. A recent study, drawing data from various regions, disclosed that a substantial 60% of students find it challenging to keep tabs on their assignments, resulting in missed deadlines and incomplete work ([Student Homework Management Study], 2021). This not only impacts their academic performance but also introduces unwarranted stress into their educational journey.

Enter the "Student Homework Tracker," a contemporary web application crafted to address these prevalent issues. The call for digital solutions is more pressing than ever, especially considering that global trends, such as the World Bank's report indicating that 95% of the world's population now has access to mobile-cellular signals, signify a widespread shift toward digitization ([World Bank Digital Access Report], 2023).

The necessity for a secure and user-friendly web application like the "Student Homework Tracker" becomes apparent when we consider the increasing integration of technology in educational settings. Notably, studies from reputable institutions have shown that schools incorporating technology into their curriculum witness a substantial 22% increase in student performance ([Technology in Education Research], 2020).

To summarize, the "Student Homework Tracker" is not merely a remedy for a common problem; it represents a stride toward aligning educational practices with the digital age. By integrating technology into the management of homework, we aim to not only save time and reduce errors but also empower students to navigate their academic responsibilities more efficiently in a world that is becoming increasingly interconnected and digital.

1.2. Project Scope, Objectives and Limitations

Project Scope:

1. User Roles:

- **Students:** Students will have the ability to view, add, and edit their assignments. They can interact with the system to manage their homework responsibilities effectively.
- **Teachers:** Teachers will be able to create, assign, and update assignments. The system will view all the submitted homeworks, allowing teachers to manage their teaching responsibilities efficiently.
- **Admin:** Administrators will have monitoring capabilities, overseeing both students and teachers. This role ensures system integrity and provides necessary support.

2. Platform Compatibility:

- The primary focus of the project is on web-based access. The web application will be optimized for use on various web browsers, ensuring compatibility across different platforms and devices.
- Native mobile applications for iOS and Android are not part of the initial scope. The development and optimization for mobile platforms may be considered in future project phases, depending on user feedback and evolving requirements.

3. Assignment Management:

- Students can view, add, and edit their assignments, facilitating a user-friendly experience for managing academic tasks.
- Teachers can view, add, edit and delete assignment to the designated subject
- The teacher views the students who submitted the homework, also the student can view their submitted homework.

4. Dashboard:

- The application will include basic reporting features for administrators, teachers, and students to track overall system usage, assignment completion rates, and user engagement.

5. Security and Data Privacy:

- The system will prioritize security measures to safeguard user data, assignment details, and system integrity.
- Compliance with data privacy regulations and best practices will be a fundamental aspect of the development process.

7. Future Considerations:

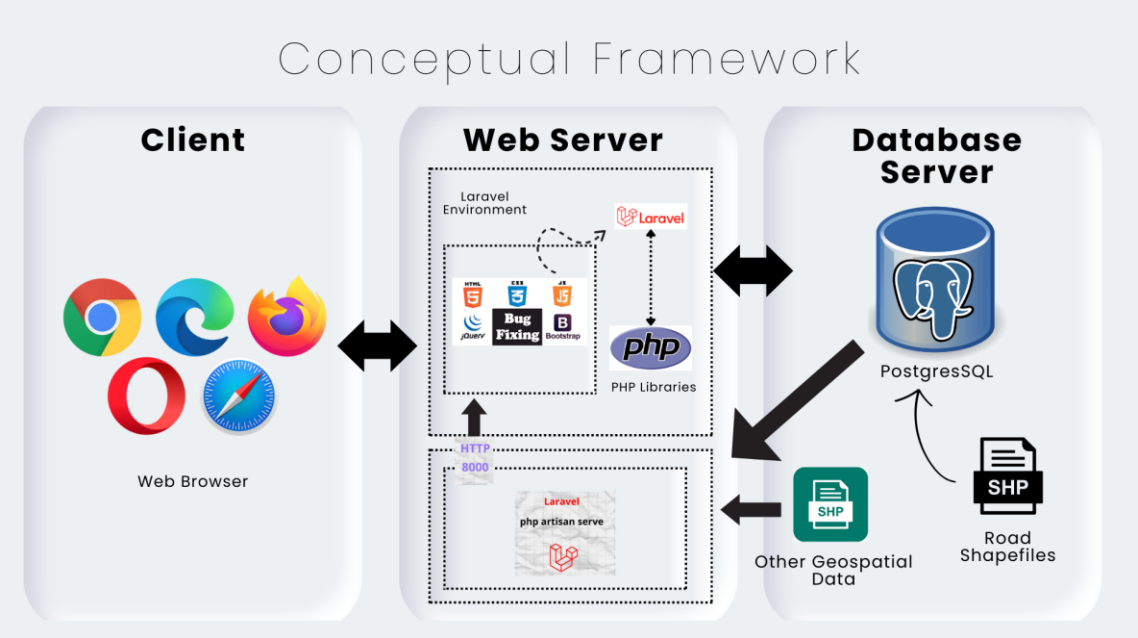
- The project scope acknowledges the potential for future enhancements, including the development of native mobile applications, based on user feedback and evolving educational requirements.

Project Objectives:

- **Efficient Homework Management:** The primary aim is to create a user-friendly platform that caters to both students and teachers. For students, the focus is on providing tools for effortless homework assignment management. Simultaneously, the platform will equip teachers with efficient assignment creation, tracking, and updating capabilities, streamlining their workflow.
- **Deadline Reminders:** An integral aspect of the project involves the implementation of a dashboard system. This system will proactively remind users, encompassing both students and teachers, of upcoming assignment deadlines. This feature is designed to enhance overall time management and subsequently improve assignment completion rates.
- **Security and Data Privacy:** To ensure user trust and compliance with data privacy regulations, the project places a significant emphasis on security measures. Regular assessments and enhancements will be conducted to fortify the application's security protocols and uphold the highest standards of data privacy.
- **User Satisfaction:** The success of the project will be measured, in part, by positive feedback garnered from user ratings. An ongoing commitment to user satisfaction involves the implementation of feedback collection mechanisms, user surveys, and iterative improvements based on user input. This approach aims to continuously refine and enhance the application based on user needs and preferences.
- **Future-Ready Features:** Acknowledging the dynamic nature of educational technology, the project sets out to establish a foundation for future enhancements. This involves creating a flexible and modular architecture that allows for the seamless integration of potential features. User feedback and emerging educational needs will inform the incorporation of these features over time.
- **Continuous Improvement:** An essential objective is to cultivate a system of continuous improvement. This involves regular updates based on user feedback, proactive identification and adoption of new technologies, and the establishment of a responsive support system to address user inquiries. The project is not static but rather dynamic, adapting to evolving requirements and technological advancements.

2. Project/System Overview

2.1. CONCEPTUAL FRAMEWORK



3. System Requirements

3.1. User Roles and Permissions

User Type	Role	Capabilities
Administrator	Website Administrator	• Add, edit or delete section • Add, edit or delete teacher • Add, edit or delete students • Assign Subject to Section • Assign Section to Teacher • Add, edit or delete Homework
Teacher	Registered Teacher	• View Section and Subject • View Students • Add, edit or delete homework • View Submitted Homework
Students	Registered Students	• Select Section • View Subjects • Add , edit or remove homework • View submitted homework

3.2. System Software

	Software	Version	Capabilities
Backend	PHP	8.2.4	Programming Language
	Laravel	10	Php Framework
	PostgresSQL	7.5	Free and Open Source relational database management system
Frontend	Bootstrap	5	Css Framework
	Jquery and other js libraries	-	Open Source Javascript Libraries

3.3. Functional Requirements

1. **User Authentication:**

Requirement: Users must be able to create accounts and log in with unique usernames and passwords. User cannot login in the system if their email is not verified

Purpose: User authentication ensures that only authorized individuals (students and teachers) can access the application, maintaining data security.

2. User Roles:

Requirement: The system should support two primary user roles: students and teachers.

Purpose: User roles define distinct sets of permissions and actions available to students and teachers within the system, ensuring appropriate access levels.

3. Homework Assignment Management:

Requirement: Students should be able to view, add, and edit homework assignments.

Requirement: Teachers should be able to create, assign, and update homework assignments for their classes.

Purpose**:** Facilitates a seamless process for students to manage their assignments and empowers teachers with effective tools for assignment creation and monitoring.

4. Dashboard System:

Requirement**:** The system should view users of upcoming assignment deadlines.

Purpose**:** Dashboard serve as timely reminders, helping users stay organized and ensuring assignments are completed punctually.

5. User Profile Management:

Requirement: Users should be able to update their profile information

Purpose: Enables users to maintain accurate and current profile information for effective communication and system interaction.

6. Search and Filter:

Requirement: Users should have the ability to search for specific assignments or filter assignments by criteria such as date, class, or subject.

Purpose: Enhances accessibility by allowing users to quickly locate assignments, particularly in scenarios involving many tasks.

7. Data View:

Requirement: Users, both students and teachers, should have a clear and organized view of their assignments and relevant details.

Purpose: Provides an easy-to-understand presentation of assignment data, enhancing user experience and comprehension.

8. Data Search:

Requirement: Implement a robust search functionality allowing users to efficiently search for specific assignments based on various criteria.

Purpose: Streamlines the process of locating assignments, reducing the time and effort required to find specific information.

9. Data Retrieval:

Requirement: Users should be able to retrieve detailed information about assignments, including due dates, descriptions, and associated resources.

Purpose: Ensures that users can retrieve comprehensive details about their assignments, facilitating informed decision-making and task prioritization.

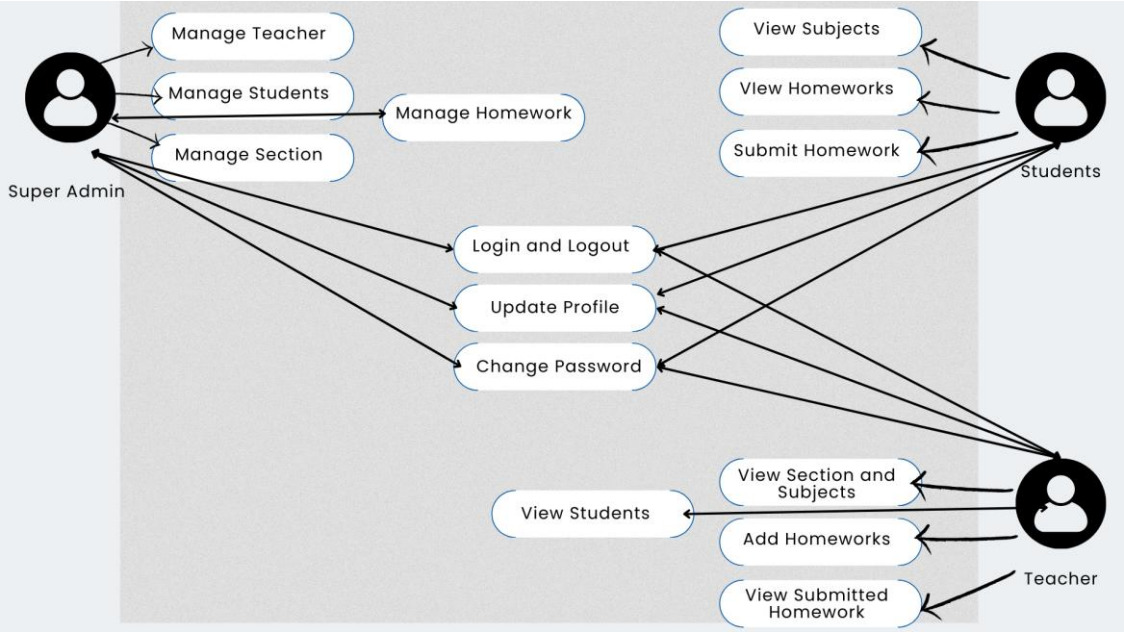
10. Security and Data Privacy:

Requirement: Implement robust security measures to protect user data and ensure data privacy compliance.

Purpose: Upholds the integrity of user information and ensures compliance with data privacy regulations, fostering user trust and safeguarding sensitive data.

3.4. System Models

3.4.1. Use case diagram

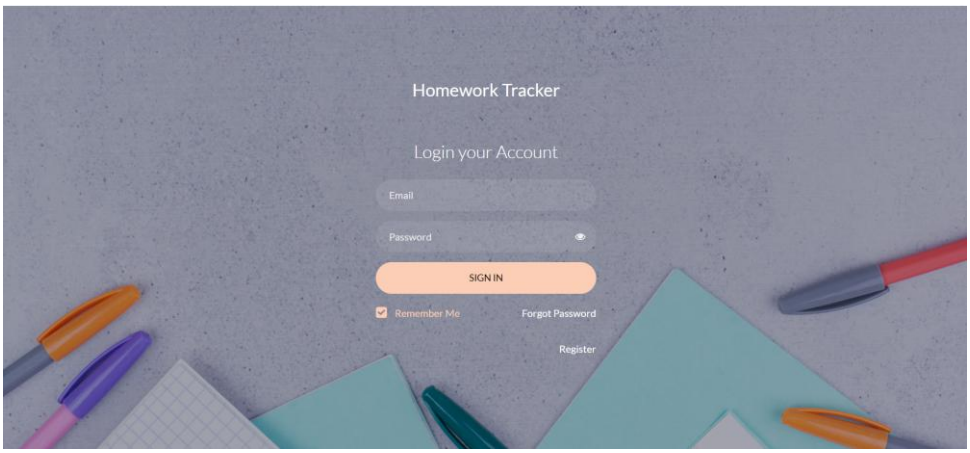


3.5. Use Case Scenario

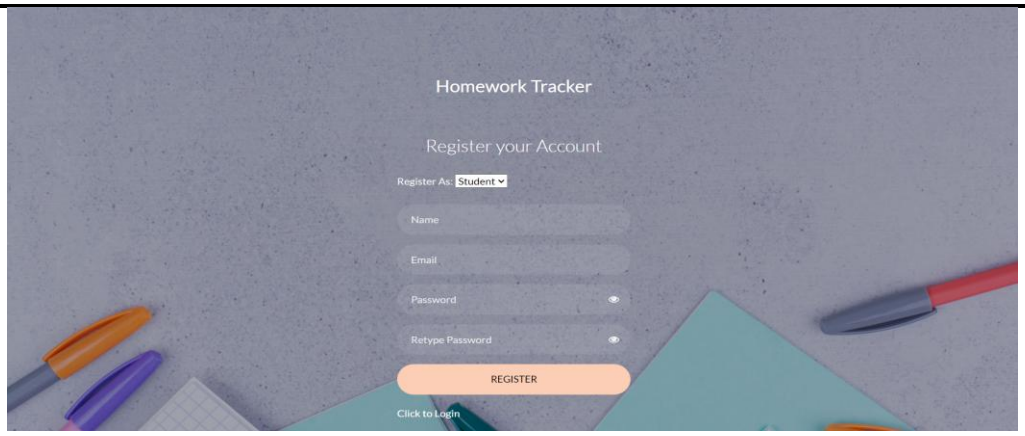
Scenario	Actor	Preconditions	Basic Flow	Expected Results	Alterantive / Exeption Flow
Submitting a Homework	Student	The student has login and view the homework available	1. Student View all the availabel homework 2. Student will click the submit homework button 3. Student will fill up the necessary information and file	1. The homework will be save 2. The homework will go to the submitted homeworks	1. Cannot uplod mp3,mp4 or pictures
Adding a Section and Subject	Administrator	The Admin will login and Add the sections and subjects	1. The Admin will go to Section page and add the section 2. Admin will fgo to subjects and add the subjects 3. Admin will fill up the necessary information	1. The section and subject will be save. 2. Admin will assign the section to teacher and student	1. If the teacher cannot assign the section to student, The student can select thier section
Adding a Homework	Teacher	The teacher will login and add the homework	1. The teacher will go to Homework page and add the Homework 2. Teacher wiill select the section and subject for the homework and fill up the necessary information	1. The homework will be save 2. The homework will be availble to section it select	1. If the teacher cannot add the homework, Admin have the previlege to add the homework

4. System Screenshots

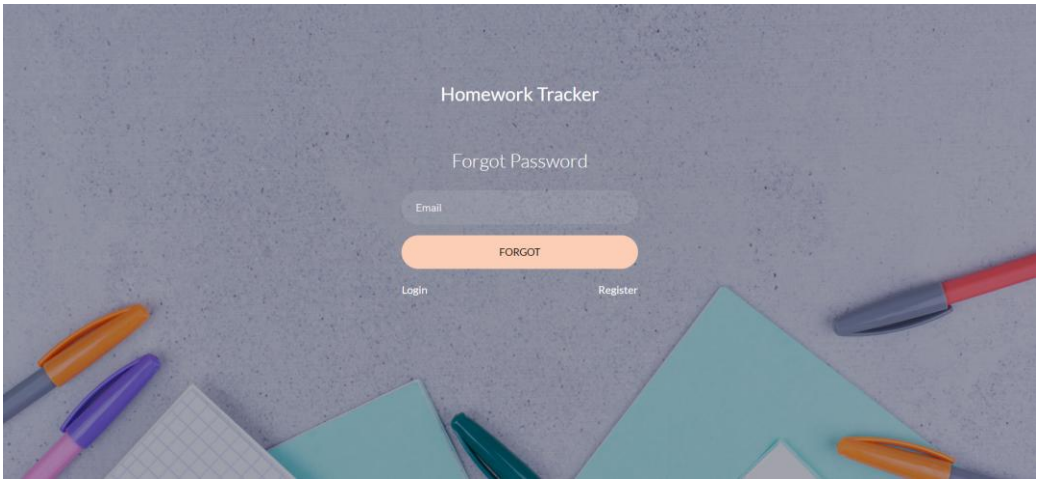
4.1. Provide system screenshots with captions



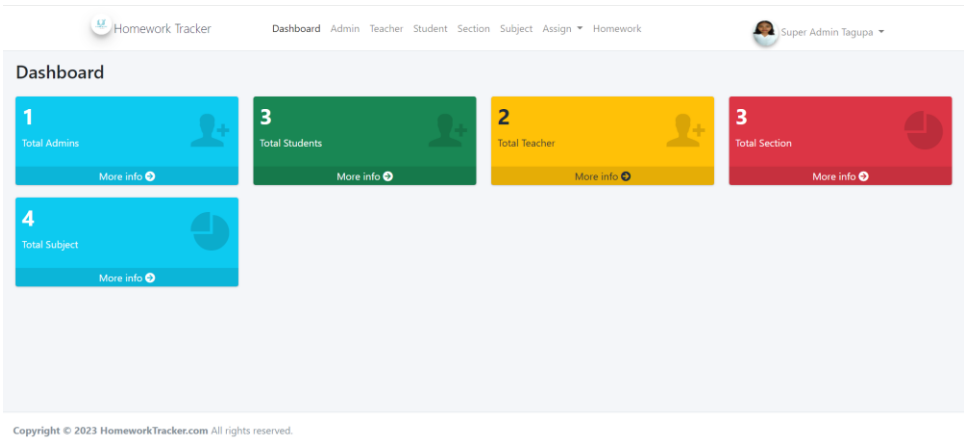
Login



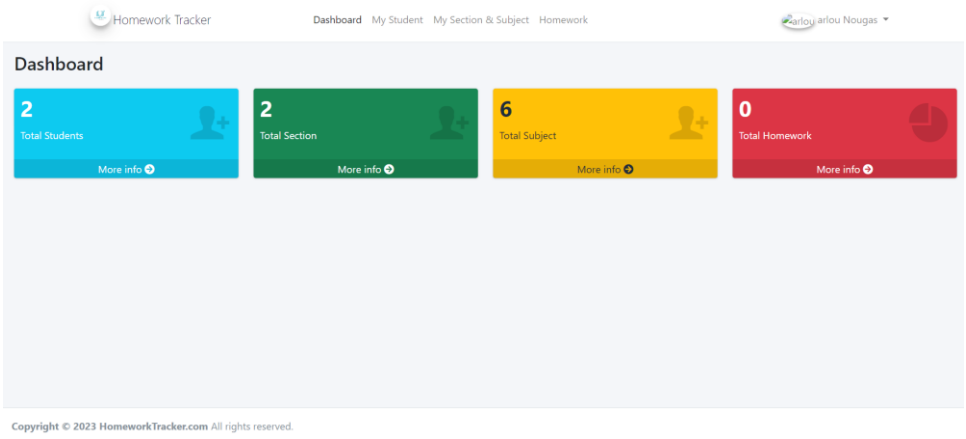
Register



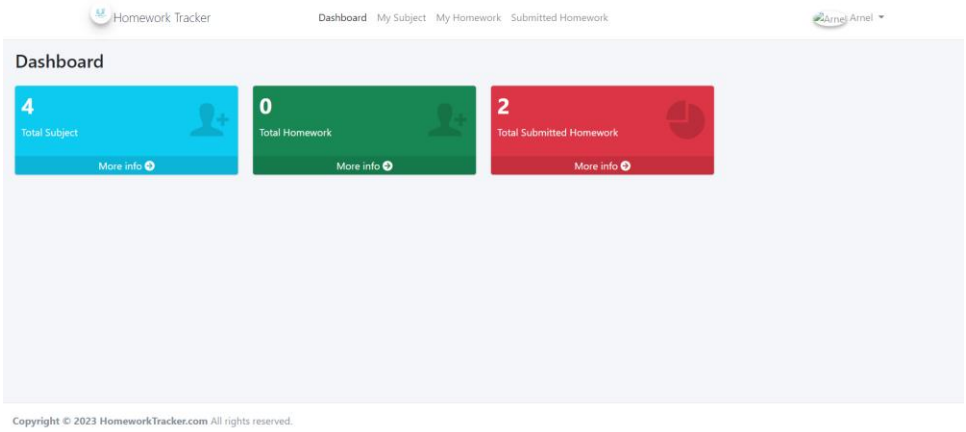
Forgot Password



Admin Side



Teacher Side



Student Side

5. Project Journey

Project Journey: Student's Homework Tracking System

1. Project Initiation:

- **Objective Definition:** Clearly define the goals and objectives of the Homework Tracker System. Identify the key features and functionalities we want to include.
- **Stakeholder Analysis:** Identify all stakeholders, including students, teachers, and administrators. Understand their needs and expectations.

2. Research and Planning:

- **Market Research:** Investigate existing homework tracker systems. Analyze their features, strengths, and weaknesses to identify opportunities for improvement.
- **Technology Stack:** Choose the appropriate technology stack for development. Consider factors like scalability, ease of maintenance, and compatibility.
- **Project Plan:** Develop a detailed project plan outlining tasks, timelines, and milestones. Use project management tools like Trello for better organization.

3. System Design:

- **Database Design:** Design the database schema to efficiently store and retrieve homework-related data.
- **User Interface (UI) Design:** Create wireframes and mockups for the user interface. Consider a user-friendly design that accommodates different user roles (students, teachers, administrators).
- **System Architecture:** Define the overall architecture of the system, including how different components will interact.

4. Development:

- **Backend Development:** Implement the backend logic for handling user authentication, data storage, and retrieval.
- **Frontend Development:** Develop the user interfaces based on the previously designed wireframes.
- **Integration:** Connect the frontend and backend components. Implement features such as task creation, assignment submission, and notifications.

5. Testing:

- **Unit Testing:** Test individual components to ensure they function as intended.
- **Integration Testing:** Verify that different modules work seamlessly together.