Palestine Technical University – Kadoorie

College of Engineering and Technology

Department of Computer Systems Engineering

Course name:

Software Engineering

Project title:

DESIGNING A WEBSITE TO ENHANCE ACADEMIC SUPPORT AND FACILITATE BOOK EXCHANGE AMONG PEERS AT PALESTINE TECHNICAL UNIVERSITY - KADOORIE IN TULKARM

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Abstract:

Collaborative Learning is a website that helps students exchange books and study summaries in paper form. It provides students with everything they need in their academic journey, including books, summaries, explanations, and previous exams electronically. The site contains a search feature by image and sound to facilitate the search process for students. In addition, students can add any book or summary to another that is not present on the site to expand the site and benefit the largest possible number of students.

CHAPTER 1: INTRODUCTION

1.1 Project Overview & Background

Most people tend to aim for leaving a mark or making their names shine, but as university students, they are still working on developing themselves in various fields of study and sharing their personal efforts can sometimes be embarrassing for some and exhausting when it comes to finding a means for it. Additionally, some individuals enjoy helping others in the context of fostering self-satisfaction but don't know how. Our system will be the means for users to present their academic efforts to others in various courses.

1.2 Problem Domain

In the digital age, students face many challenges in accessing essential resources for their studies and managing academic materials efficiently. In addition, a large percentage of students prefer to study on paper rather than electronically. But under the current circumstances, the prices of these books are relatively high, Not all students can afford it, and there is difficulty accessing the necessary study resources electronically.

Therefore, our website aims to serve as a hub offering a wide range of tools, resources and services to support students throughout their academic journey.

1.3 Project Objectives

Our project contributes to the exchange of educational resources among students through electronic and physical format to accommodate diverse preferences. This approach recognizes the importance of traditional print materials for some students. In addition, the project aims to serve a large number of students, simplify study processes, enhance and facilitate knowledge exchange between different universities, and centralize academic materials to facilitate access to them.

❖ How We Propose to Address the Diagnosed Problems:

- Saving time and effort: This is done by providing a service for delivering paper books exchanged between students, which makes it easier for them to obtain educational materials without the need to go to libraries or universities, and providing an advanced search feature that allows students to easily find the required educational resources, whether electronic or paper, Without having to spend a lot of time searching.

- Data security and privacy: Implement strong security measures to ensure the protection of users' personal data and academic materials.

- Reducing costs: Implement a book sharing feature where paper books can be exchanged or borrowed, reducing the burden of purchasing new books.

1.4 Project Scope

Our innovative system, called Collaborative Learning, is a dynamic platform that prioritizes the user and is designed to revolutionize students' access to a wealth of educational resources and interaction with them. Unlike traditional academic programs, our system seamlessly integrates the exchange of physical textbooks with electronic participation. The student places their books on the website for exchange or loaning to other students. Additionally, the website provides study guides, lecture notes, and past exam papers. Our system features advanced capabilities such as image and audio search, making it easier for students to find specific resources even without knowing the exact title or location of the author.

1.5 Chapter Summary

The Collaborative Learning Portal will provide students with a convenient way to display educational resources such as books, notebooks, and test forms through a storage library containing these resources in multiple formats, including digital and paper formats, to meet diverse preferences. In addition, the student can add a request to obtain this resource by registering on the platform and selecting the desired course. The student can also join the discussion room when he wants advice.

This chapter discussed the mechanism of the student assistance system and their effective mutual participation in giving and taking during their academic journey.

Lastly, the project objective and project scope have been listed and discussed.

also, The structure of the proposed system has been justified and project contribution is stated. Next,

will be further discussing about the concept of portal management system.

CHAPTER 2: REQUIREMENTS GATHERING APPROACH

At the beginning of our project, we faced challenges in determining how to design an effective system to manage this process. Therefore, we conducted research online and visited some well-known websites in this field, such as this website: https://www.mostaql.com/portfolio/749164

Or this: https://m.badlkitabk.com/

We gathered ideas on how to achieve our goals and started the requirements discovery phase. We followed an approach based on browsing the web to gather user and system requirements, in addition to consulting with our trainers Dr. Osama Hamed and Dr. Nael Salman, who provided us with guidance on effectively identifying requirements.

We also conducted interviews with software experts where we gained valuable advice on how to gather and analyze requirements correctly.

CHAPTER 3: USER REQUIREMENTS DEFINITION

3.1 Functional User Requirements

I. ADMIN:

- ❖ Courses names**:**
  - Adding Course: When adding a course, all related information should be added.
    This information is:
    - - Course name
    - - Majors which take this course

  - Deleting Course: using course name.
  - Editing Course Information: the information that can be edit are department and course name

❖ Courses notes:
- Adding Course note: When adding a course note, all related information should be added.
  - This information is:
    - Course name.
    - Title.
    - Year and semester.
    - Link.

- Deleting Course note: using course name and title.
- Editing Course Note Information.

❖ Previous exams
- Adding previous exams: When adding a previous exam, all related information should be added.
  - This information is:
    - Course name
    - Title
    - Year and semester
    - Link

- Deleting previous exam: using course name and title.
- Editing previous exam Information.

❖ Books
- Adding Book: When adding Book, all related information should be added.
  - This information is:
    - Course name.
    - Title.
    - Link.
    - Picture of the book
- Deleting Book: course name and title.
- Editing Book link exam Information

❖ Managing users: the admin shall have a full access on the users database:
  - Delete user.
  - Edit a user record.
  - View user info.
  - The administrator can also view the users.

❖ Managing orders:

This is done through the control panel, which is a visual interface that provides a summary of the main information and tools related to requesting and booking paper educational resources to help the administrator carry out these tasks efficiently:

- View requests.

- Update the order status: "Delivered," "Cancelled," or "Returned."

-Solving problems if they occur when ordering books.

❖ The administrator must login using email and password.

II. USER:

❖ No need to have an account:
- Browsing: The user can open courses and download files without the need for access permission.

- Search and discovery: Everything that is uploaded to the platform's website carries the course number, a description of the content, and an image of it that act as keywords to enable the user to accurately search for the course, display its details, and image search.

❖ Need to have an account: the user identified in the system can, in addition to browsing and searching:

- Request uploaded items offered for exchange or donation through the Create Request button.

- Adding Book: When adding Book, all related information should be added.
    This information is:
        - Course name.
        - Title.
        - Link.
        - Picture of the book

- Adding previous exams: When adding a previous exam, all related information should be added.
    This information is:
        - Course name
        - Title
        - Year and semester
        - Link

- Express opinion: Ability to comment, view ratings, and send feedback.

3.1 Non-Functional User Requirements

❖ Operational Requirements

- The system should operate properly in most web browsers.

- The system should be available when needed, with an acceptable level of downtime for maintenance or upgrades.

❖ Performance Requirements

- The system should meet certain performance criteria, such as response time, throughput, and resource utilization, to that it can meet user needs.

- The system should allow the user to reserve books in a short period of time.

❖ Security Requirements

- The system shall validate the username and password to login and make changes to the system.

- The system shall request the current password of the users to let them change to a new password.

- Passwords should be encrypted.

❖ Usability Requirement

- The portal will have an easy-to-use interface that allows customers to easily navigate and use the portal's features.
- The system should allow users to complete tasks efficiently and without unnecessary steps.

- A new customer should be able to use most system functions in less than half an hour of training.

❖Availability: Can be used 24 hours a day, 7 days a week.

❖User friendly interfaces:
- Colors are comfortable to the eye.

- The window provides assistance such as error messages while entering invalid data.