A Web Portal for CO Management

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Internal Guide
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We would like to take an opportunity to express our humble gratitude to our internal project guide **Prof. Urjit Mehta,** under whom we undertook our project. Their constant guidance and willingness to share their vast knowledge made us enhance our knowledge and helped us to complete the assigned tasks to perfection. Without their effort, support and astonishing testing ability this project may not have succeeded.

With Sincere Regards,
Prajapati Bhumi K.
Rajpurohit Himani S.
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Chapter I
Introduction

Abstract:

Implementation of a Web portal for CO-Management

Dharmsinh Desai University

The CO-Management systems improve the quality of education. CO-Management systems are software applications or platforms designed to facilitate and automate various administration in an educational institution. Implementing a management system brings many benefits, including efficiency, reduced paperwork, and highly accurate data. This project is built using the PHP-based framework Laravel. CO-Management systems play a pivotal role in elevating the standards of education. These systems, encompassing software applications and platforms, are meticulously engineered to simplify and automate a wide area of administrative tasks within educational institutions. The integration of a CO-management system yields a multitude of advantages, such as heightened operational efficiency, a significant reduction in bureaucratic paperwork, the maintenance of exceptionally precise data, and the enhancement of communication channels. It is noteworthy that this project is developed utilizing the Laravel framework, underpinned by PHP, thereby ensuring a robust and dependable foundation for this innovative educational solution. In this system, the user must log in to the system and change the password to register into the system. The system assists us in creating a paper structure. It has different components to adopt semester, subject, and sessional. Then the user can be admitted into the total number of COs. The user must admit into each CO the number of questions selected and the average of each CO. As the user will pop the submit button the layout of the paper is prepared. Here the Database will store tables that will have the records of semester, subject, and sessional. This system analysis the system and creates a bar graph per sessional and overall semester. The system makes the work of the user easy and reduces the work of the user. The system increases efficiency as the manual task is reduced. The active directory will store the data of the user.

Introduction:

Part-A

The CO-Management system serves as a valuable tool for professors, streamlining the process of exam paper creation in a standardized format. This system maintains the accuracy and organization of this critical information. Administrators, likewise, can simplify their tasks by uploading comprehensive files, eliminating the need for manual data entry. One noteworthy feature of the CO-Management system is its seamless login experience. Professors need only log in once to access various modules within the portal, eliminating the need for repetitive sign-ins upon successful authentication. Furthermore, the CO-Management system incorporates an agenda of handling essential tasks. Upon initial login with a default password, professors have the option to change their password by providing their email ID and the existing password. Within the profile page, professors can select their semester, subject, the number of Course Outcomes (COs), and the primary questions through convenient drop-down menus. Sub-questions can be provided in designated text boxes, with the ability to assign weightage to each CO. The system then automatically computes the total number of COs and generates a structured exam paper template. The "Make Paper" button serves as a pivotal feature, allowing the system to create a blank exam paper structure. Professors can specify the number of questions for each CO, the corresponding marks allocated to each question, and whether options are required for certain questions. This process culminates in the generation of a comprehensive and well-structured exam paper template.

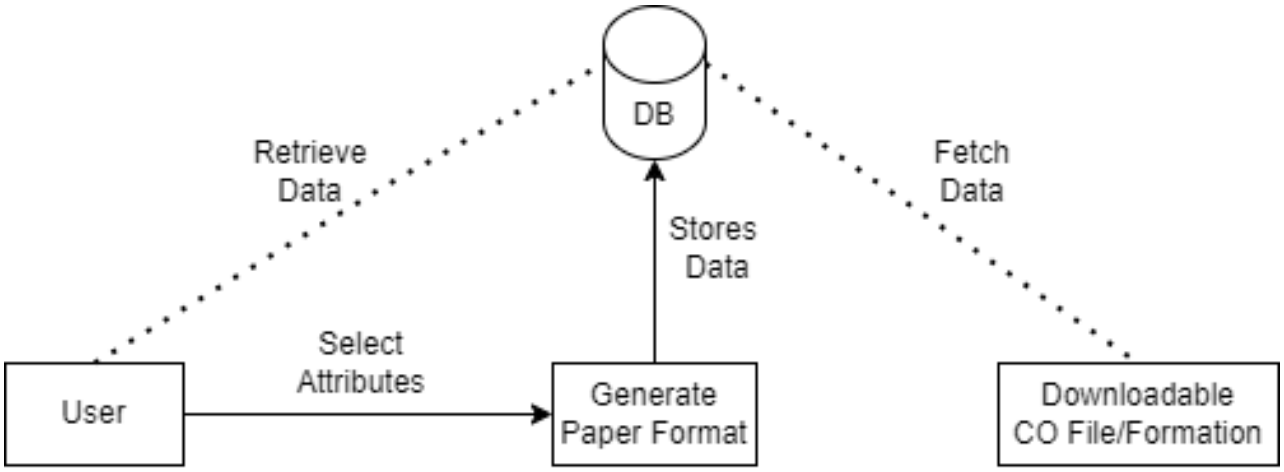

Fig 1.1 Block Diagram (part-A)

Part-B

The CO-file which is downloaded in the first part of the system will be uploaded at this stage. The CO-management system provides the feature of analysis by creating bar graphs automatically. In this stage of the system, there is a user interface where the user will select a number of total COs. Based on the selected total number of COs the file will be generated. This system has the feature of calculating the percentage of COs with the formula dynamically. The second file which is created will have the percentage of COs as per the students who attended in three sessionals. Based on the student's attended COs the bar will be generated. At this stage, both files will be uploaded stored, and make changes accordingly in the database. The system ensures that exam papers are created in a standardized format, which benefits both professors. The system offers convenient and flexible data entry options, making it easy for professors to calculate COs and po's. Overall, the CO-Management system is a valuable tool that can help professors and administrators streamline the exam paper creation process and create comprehensive and well-structured exam papers.

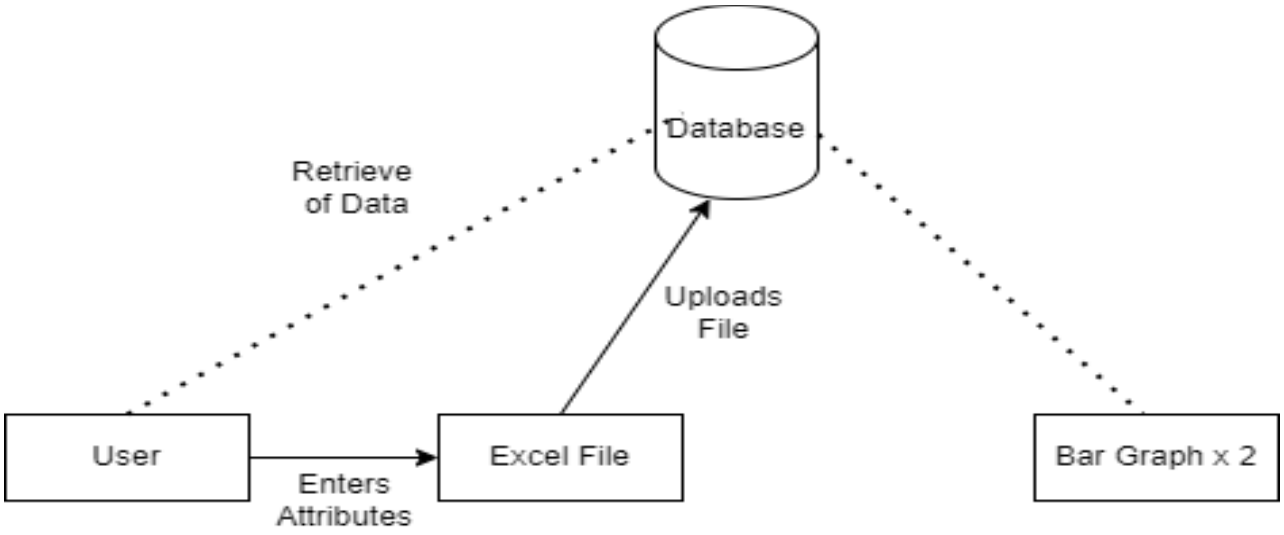

Fig 1.2 Block Diagram (part-B)

❖ Technology and Tools Used:

✦ Technology:

- PHP
- Laravel Framework
- MySQL (Local Database)

✦ Tools:

- Visual Studio Code
- XAMPP/WAMP

Chapter II
About the System

❖ Scope:

> Easier Exam Paper Creation: The project makes it simpler for teachers and administrators to create exam papers.

> Quick and Easy Login: Users can log in effortlessly without repeating the process.

> Helpful Digital Assistant: A digital helper to manage important tasks, like data analysis and making charts based on that analyzed data.

> Less Typing, More Selecting: Users can pick options from menus instead of typing information.

> Automatic Exam Paper Setup: The system makes the exam paper format automatically, saving time and keeping it consistent.

> Customizable Exam Papers: Teachers can decide how many questions to have, assign marks, and add options as needed.

> Time-Saver and Organizer: It reduces the time and effort needed to create papers while keeping everything organized.

> Better Exam Papers: It ensures well-structured papers that are good for both teachers and students.

> Potential for More Features: In the future, it could include customization, working with learning systems, data analysis, a mobile app, more languages, and better security.

> Helping Education: The project can make education administration and testing more efficient and improve quality.

❖ System Functional Requirements:

> R1. Manage User:

- R1.1: Registration of User

  Description: Users can upload the file having details.

  Input: Excel file uploading.

  Output: Confirmation Message.

- R1.2: Login of User

  Description: Users can log in to the system using email id and password.
  Input: email id and password.
  Output: Confirmation Message and redirection.

- R1.3: Change Password

  Description: User can change password.
  Input: new password and old password.
  Output: Confirmation Message.

- R1.5: Logout

  Description: User can logout to the system.

  Input: Click on logout button.

  Output: Confirmation Message and redirection.

> R2. Manage Data

- R2.1: Upload Excel File

  Description: upload excel file.

  Input: Excel file with details.

  Output: Confirmation Message.

- R2.2: Generate Bar Chart

  Description: Using excel file create bar chart.

  Input: Excel file with details.

  Output: Display analytical data in form of charts.

❖ System Non-Functional Requirements:

- **Security:**

  Ensuring the confidentiality, integrity, and availability of data is paramount. This requirement includes measures like encryption, access controls, and robust authentication to protect against unauthorized access and data breaches.

- **Performance:**

  The System must be responsive and efficient, ensuring tasks are completed within acceptable timeframes. Performance requirements encompass response times, throughput, and resource utilization to guarantee an optimal user experience.

- **Scalability:**

  The system should be capable of handling increasing workloads and growing data volumes. Scalability ensures that the system can accommodate more users and data without a significant decrease in performance.

- **Reliability:**

  Reliability requirements focus on system stability and the ability to deliver consistent and predictable results. This includes mechanisms for fault tolerance, redundancy, and backup and recovery to minimize downtime.

- **Usability:**
  User-friendliness and accessibility are crucial. Usability requirements ensure that the system is easy to use, with an intuitive interface, clear documentation, and support for user training. This enhances user adoption and satisfaction.

Chapter III
Analysis

❖ **Use Case Diagram:**

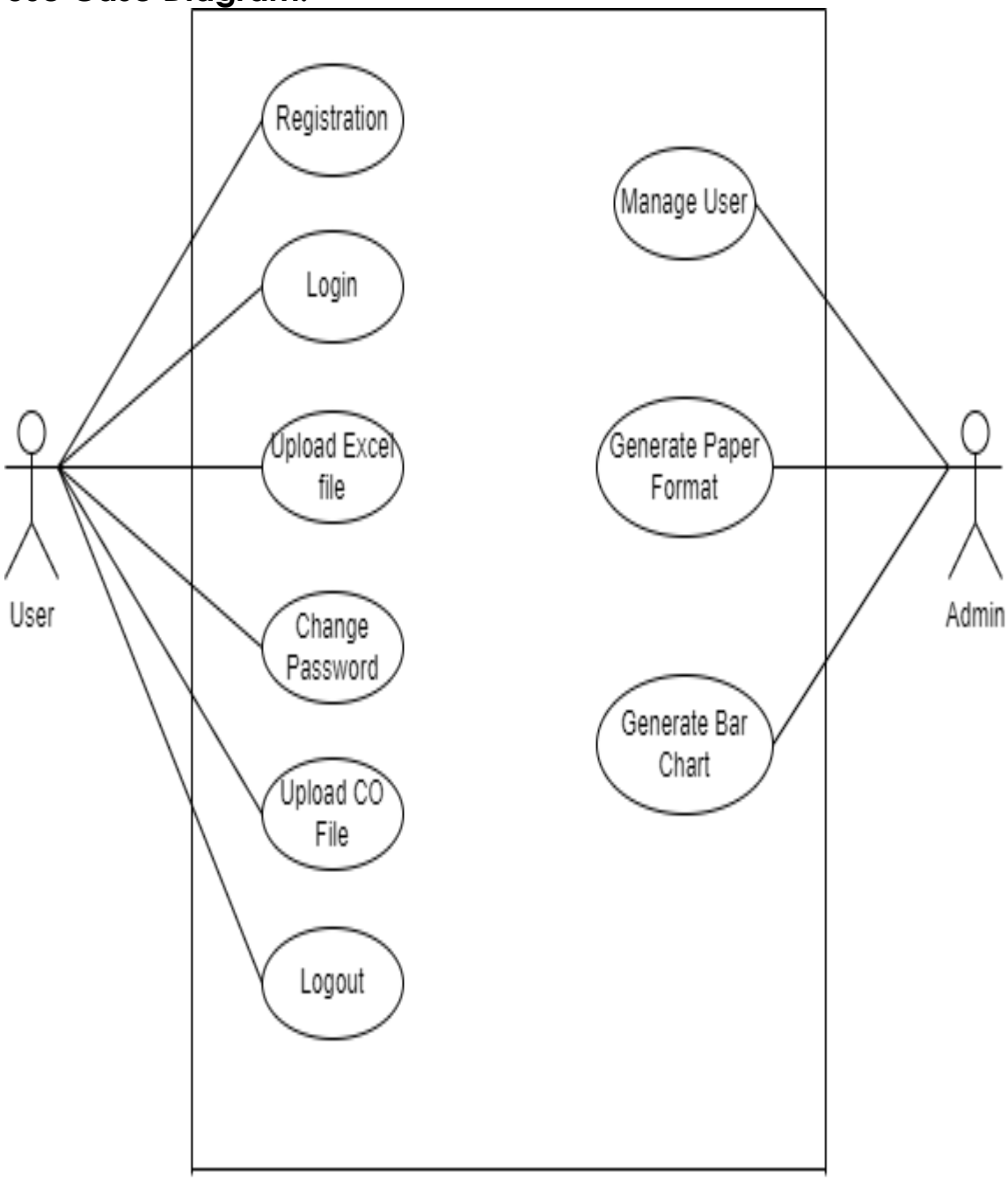

Fig 3.1 Use Case Diagram

❖ **Sequence Diagram:**

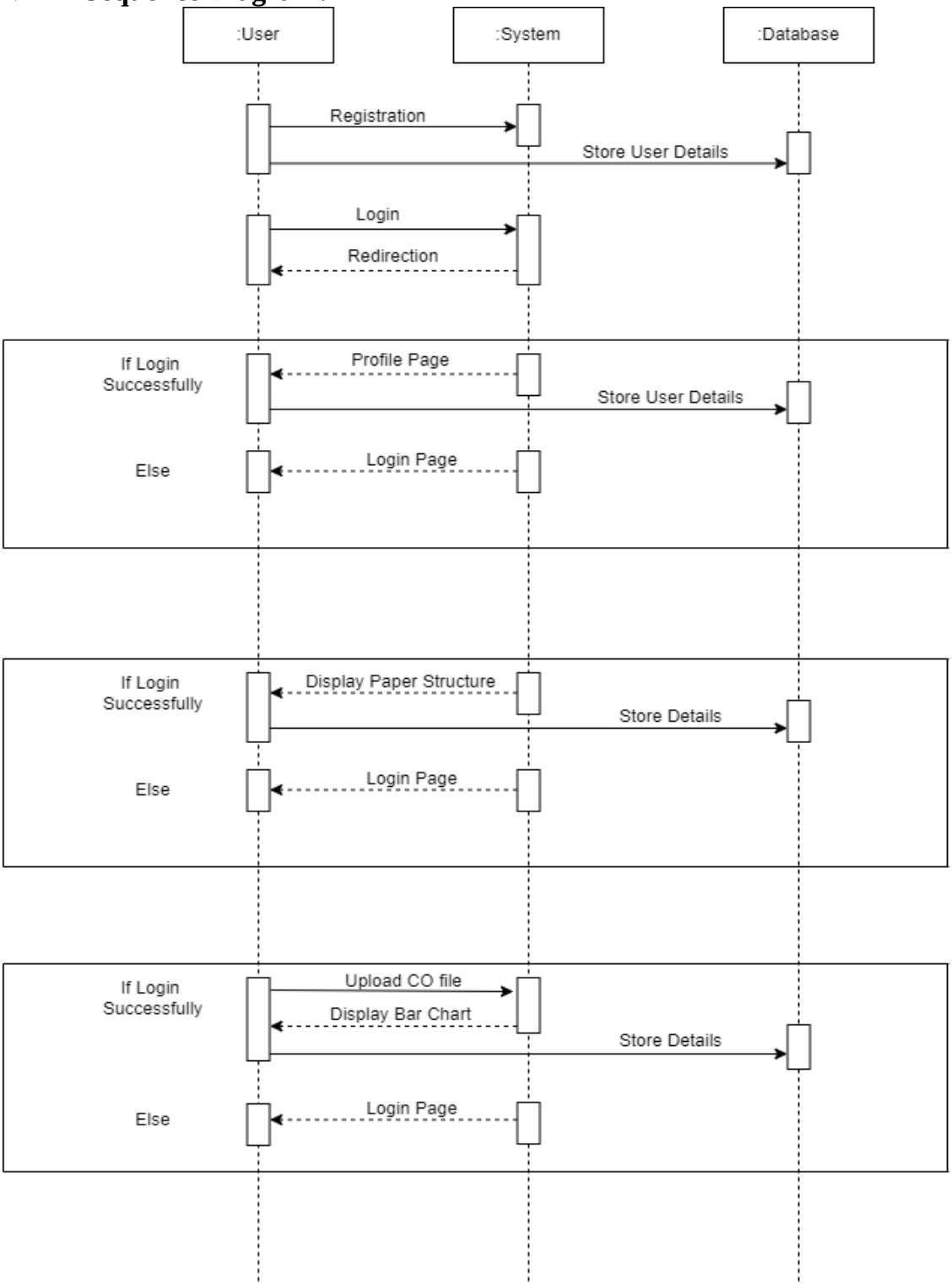

Fig 3.2 Sequence Diagram

❖ Activity Diagram:

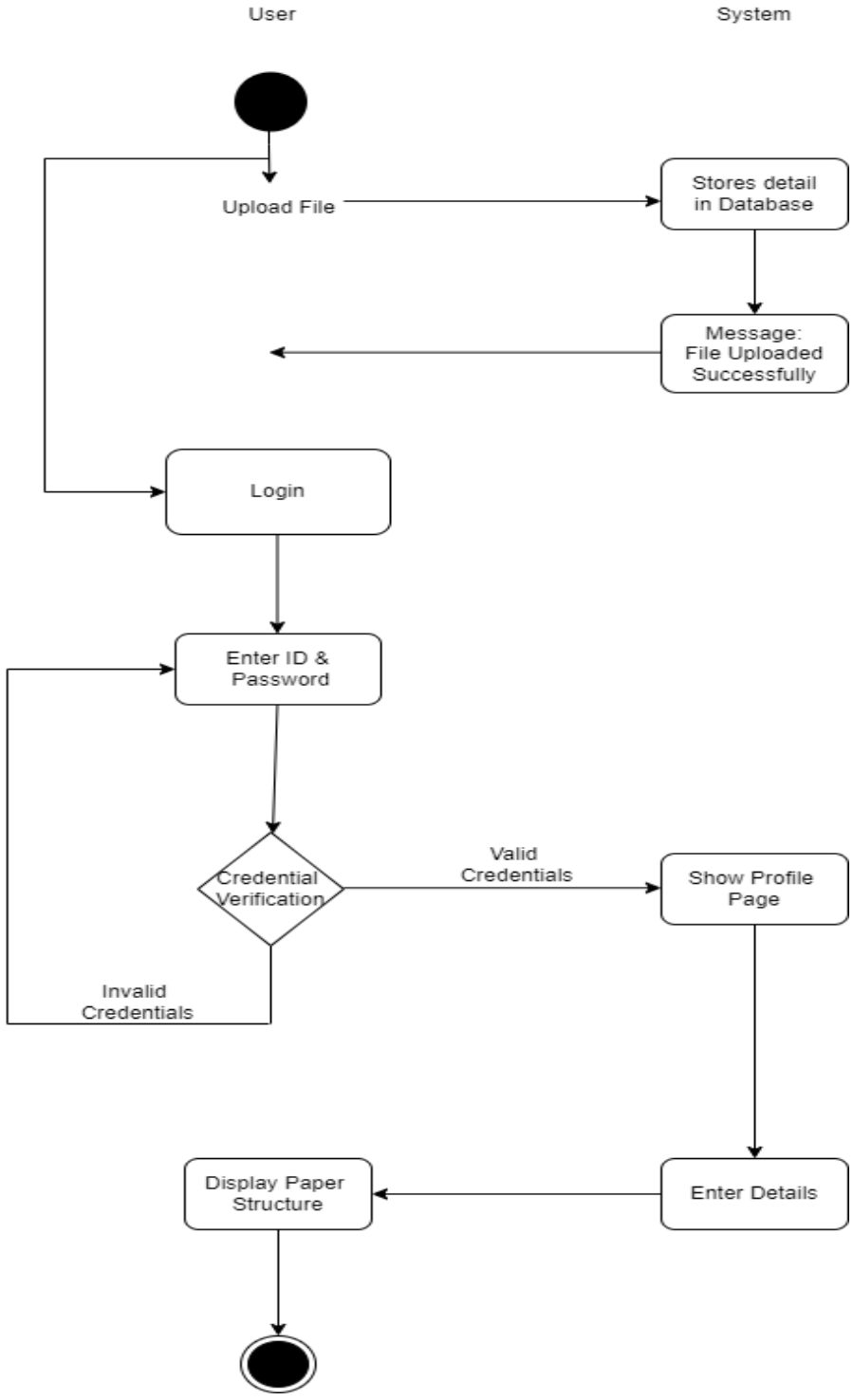

Fig 3.3 Activity Diagram

❖ ER Diagram:

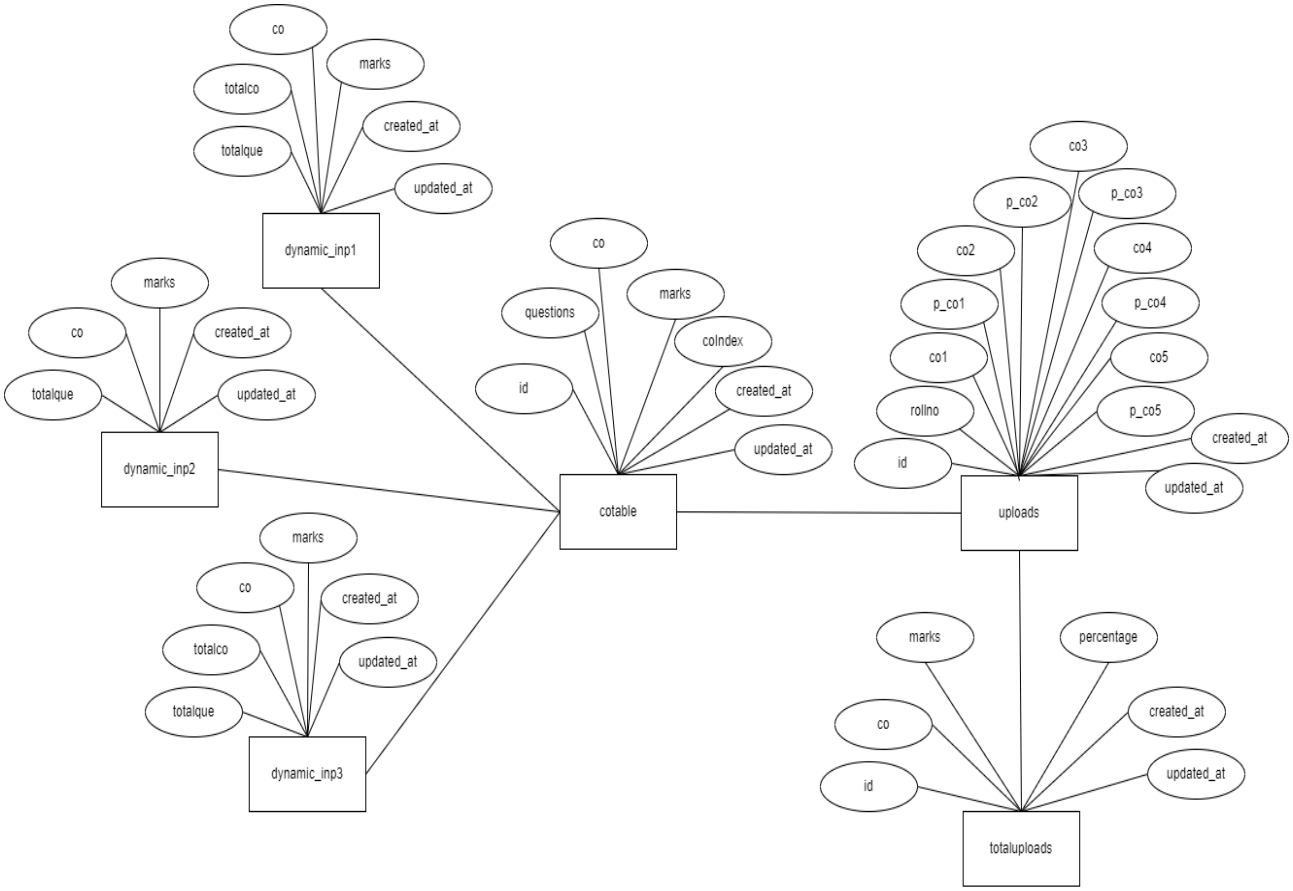

Fig 3.4 ER Diagram

Chapter IV
Design

❖ Data Dictionary:

All Tables Part-A

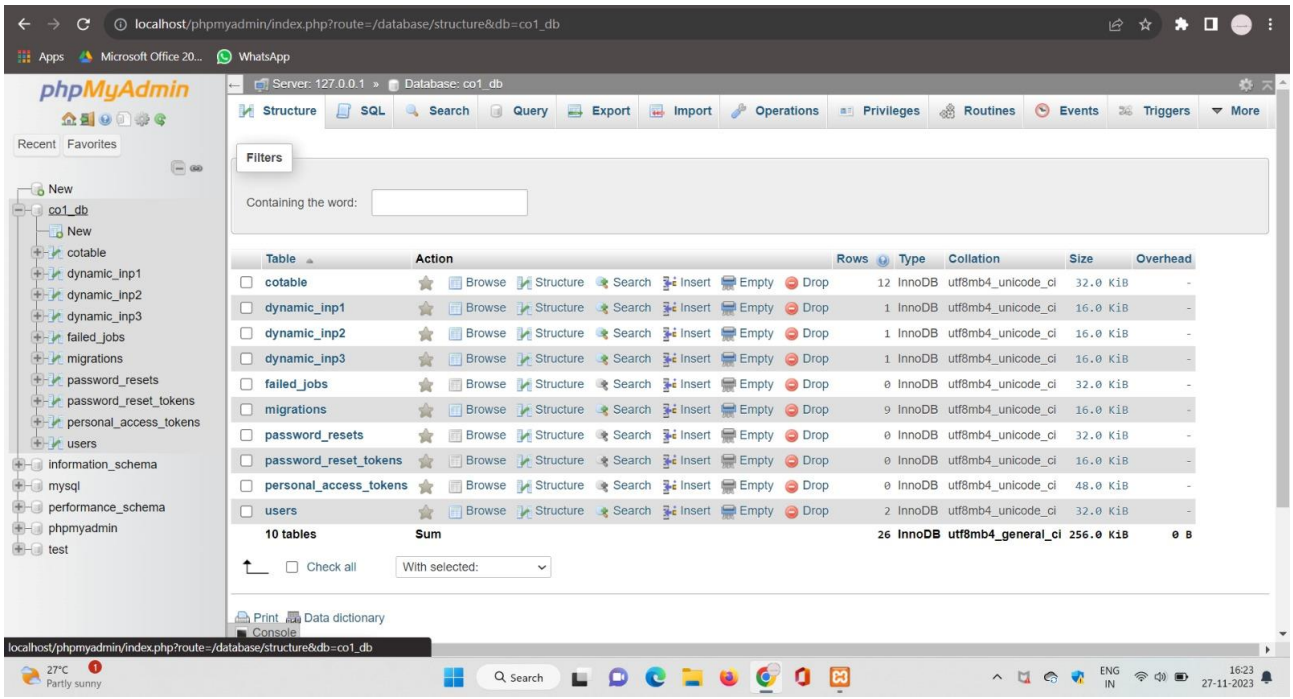

Table 4.1. All Tables Part-A

Registration Table (cotable)

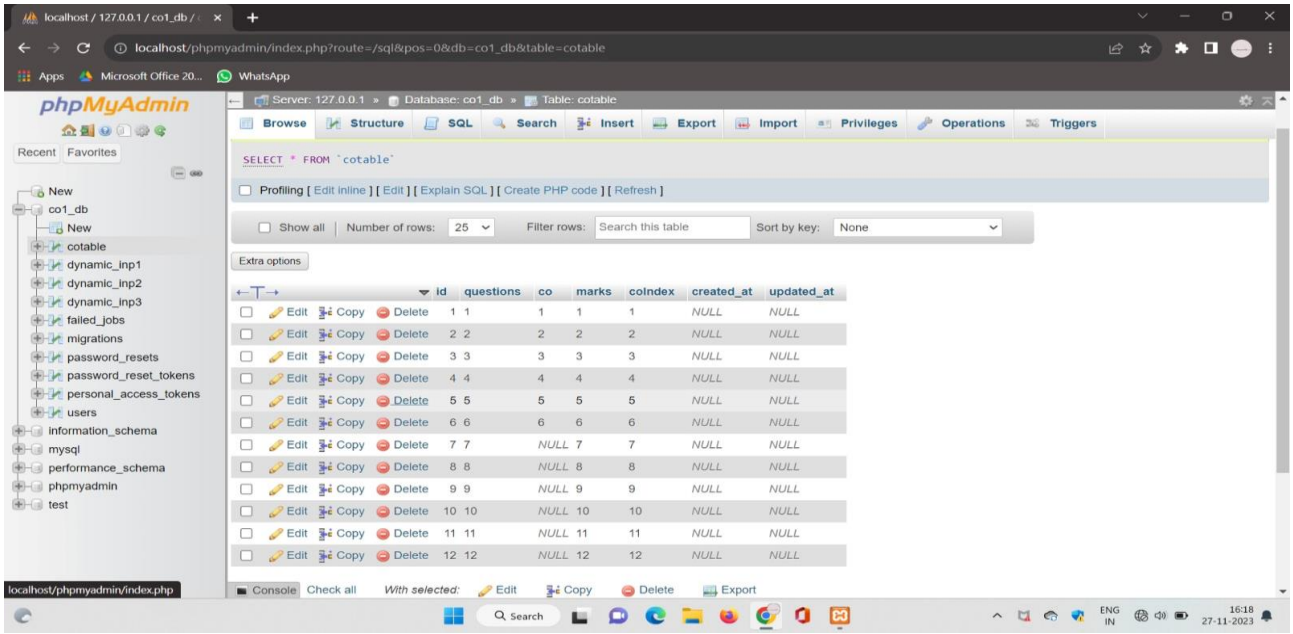

Table 4.1. Registration Table

Upload Table (uploads)

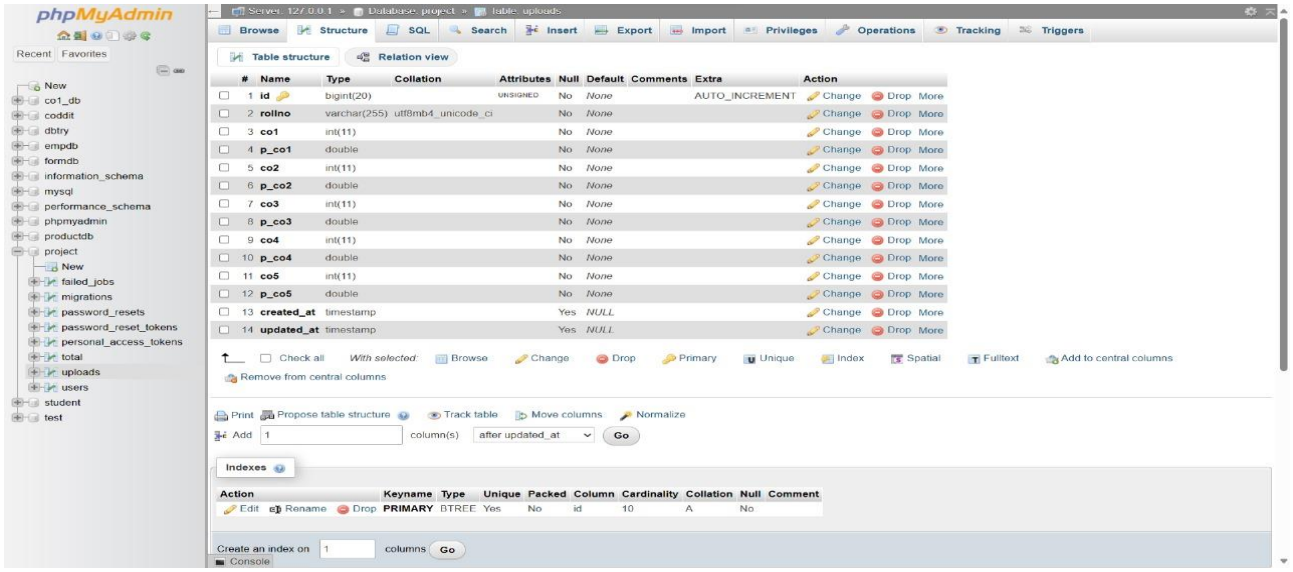

Table 4.1. Upload Table

Total Upload Table (totaluploads)

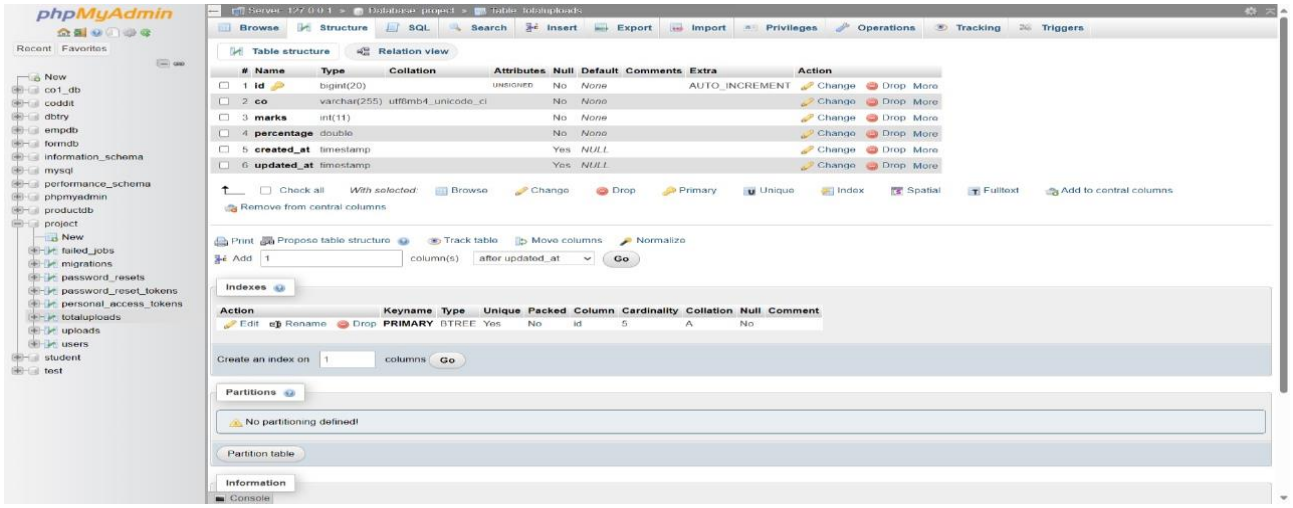

Table 4.1. Total Upload Table

Dynamic input (dynamic_inp1)

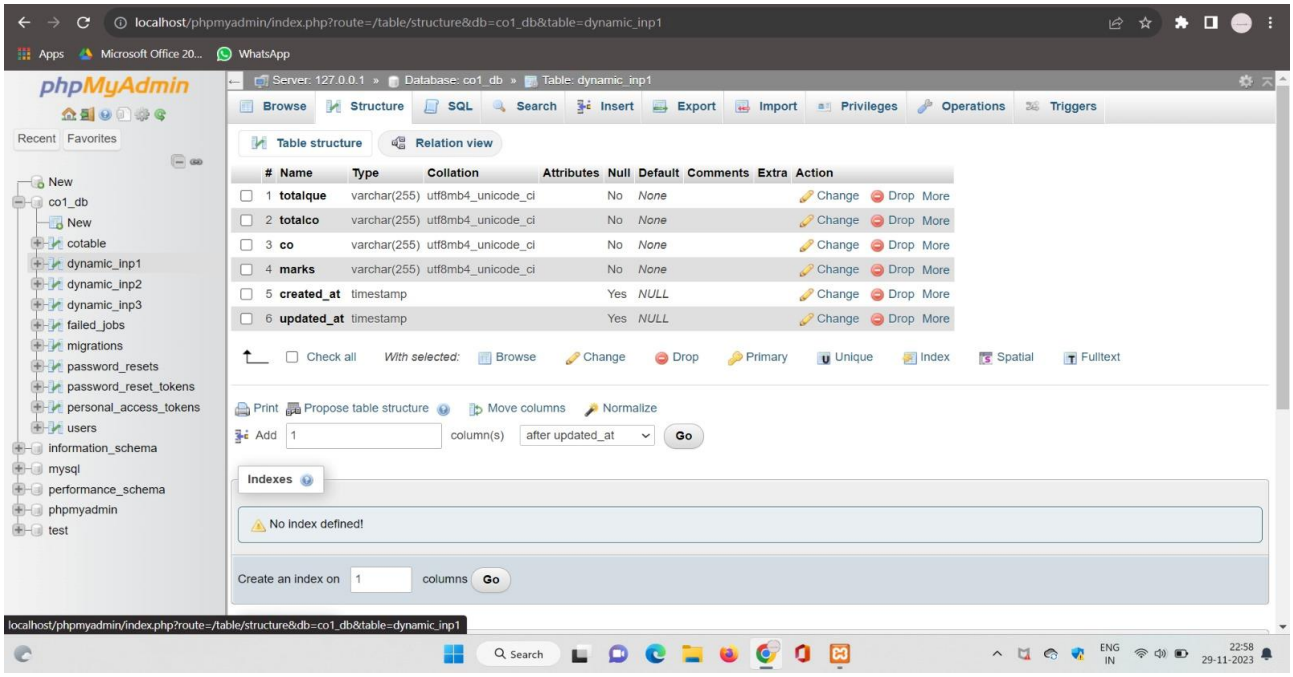

Table 4.1. Dynamic input 1 Table

Dynamic input (dynamic_inp2)

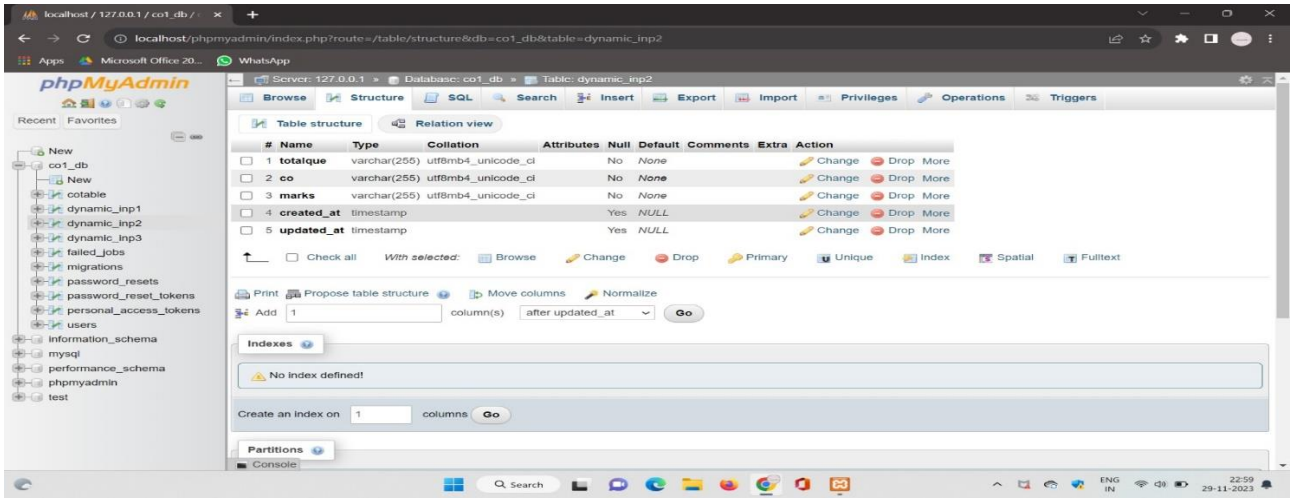

Table 4.1. Dynamic input 2 Table

Dynamic Input (dynamic_inp3)

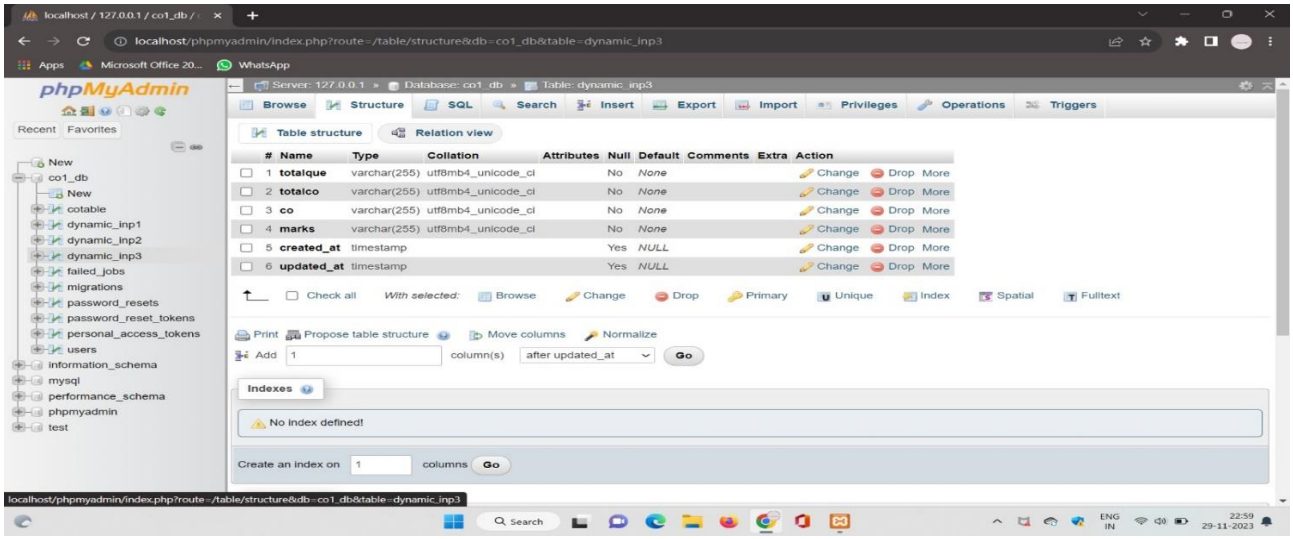

Table 4.1. Dynamic input 3 Table

Question 1 Input Page

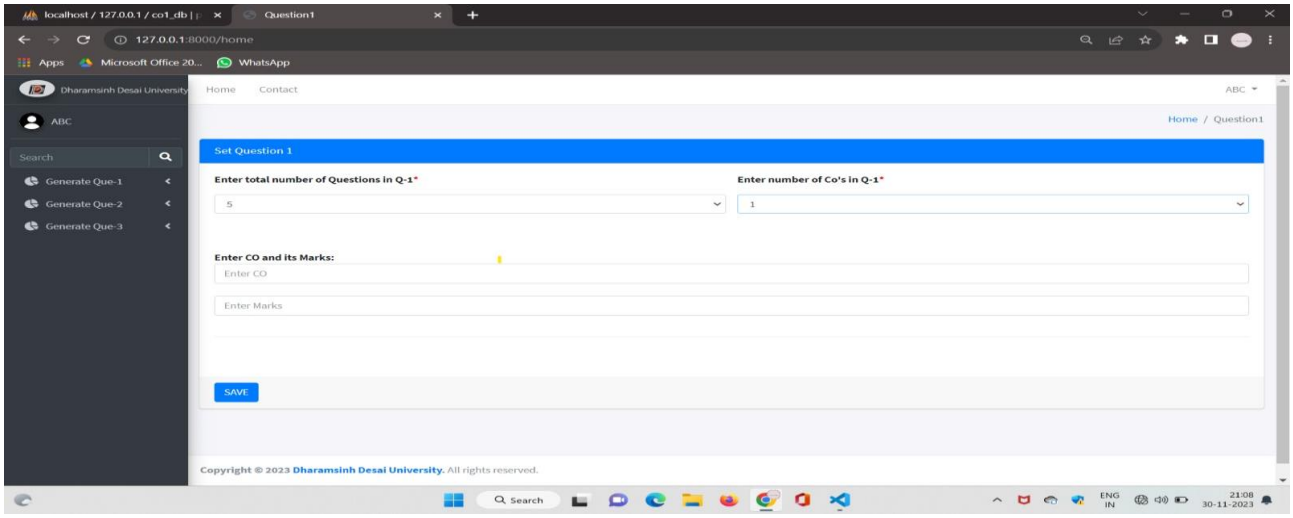

Fig 4.2. Question 1 Input Page

Question 2 Input Page

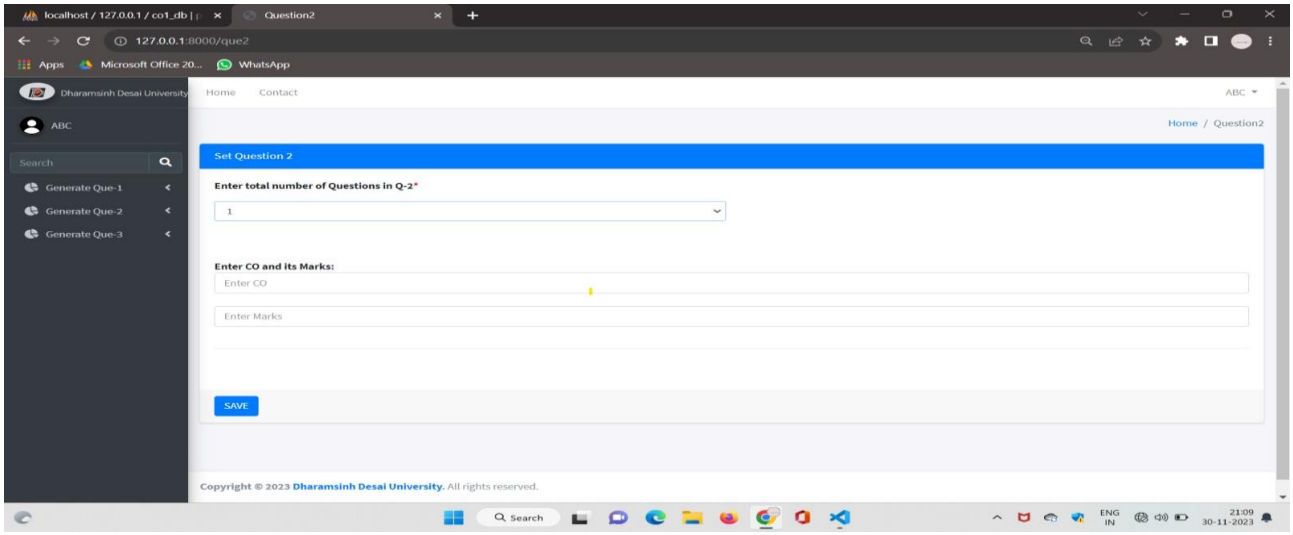

Fig 4.2. Question 2 Input Page

Question 3 Input Page

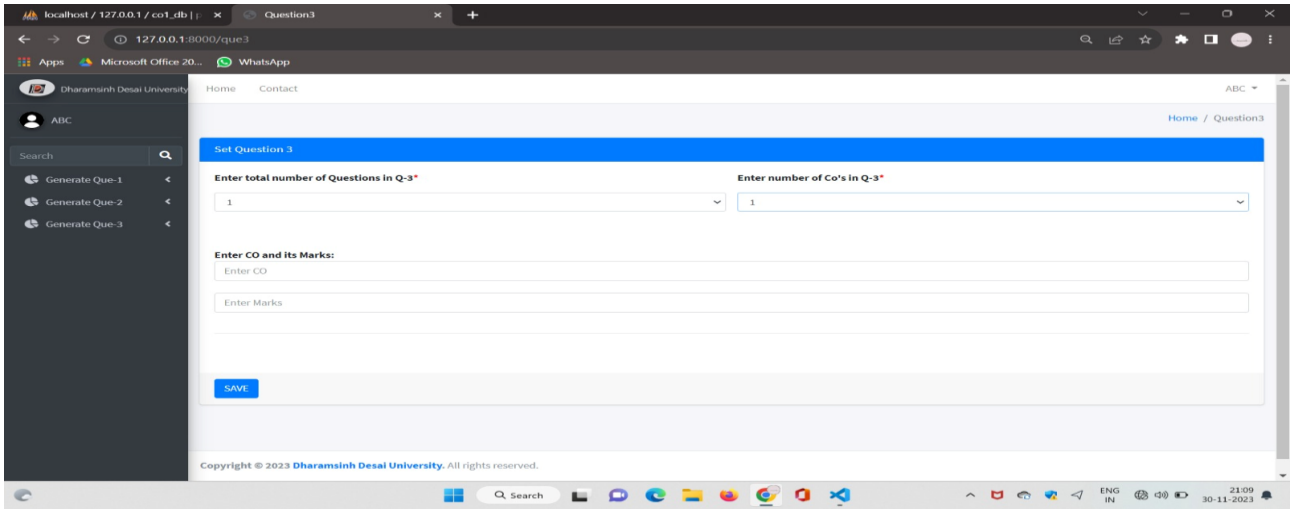

Fig 4.2. Question 3 Input Page

Bar Chart

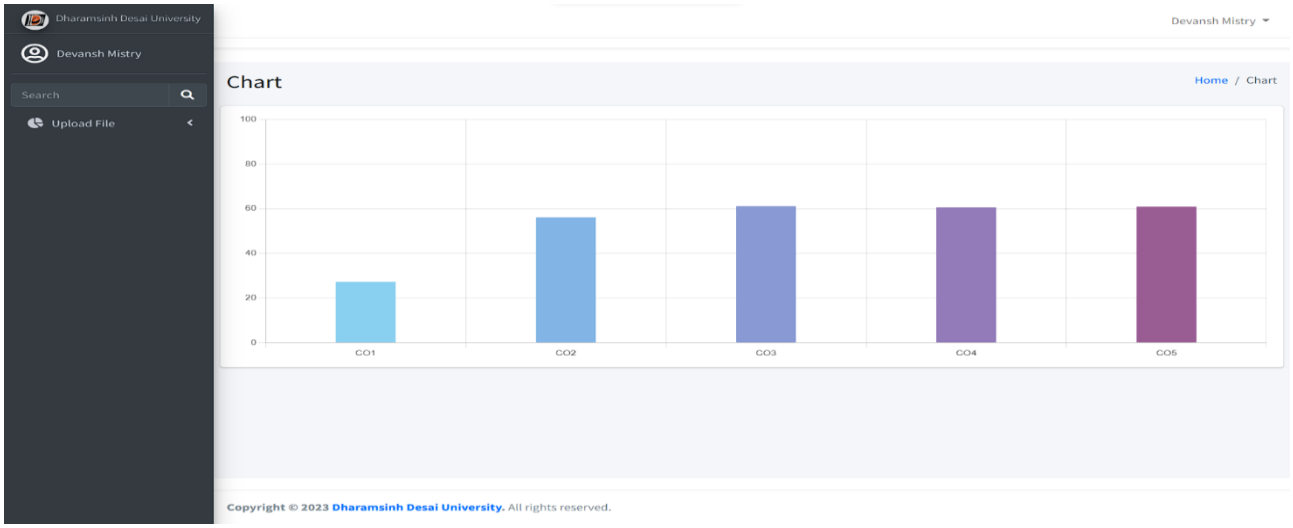

Fig 4.2. Bar Chart

Login Page

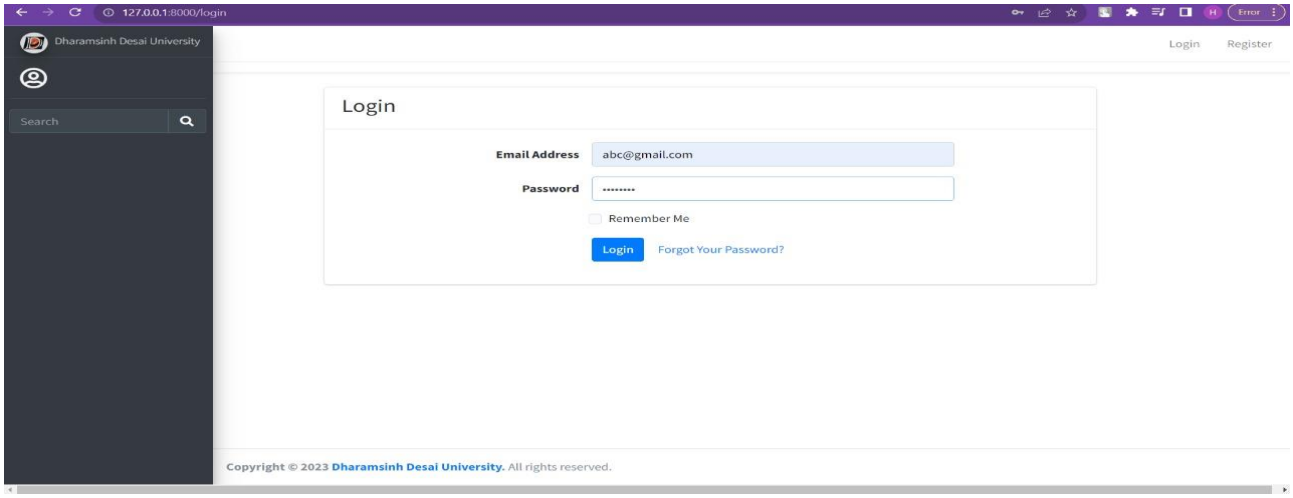

Fig 4.2. Login Page

Upload File Page

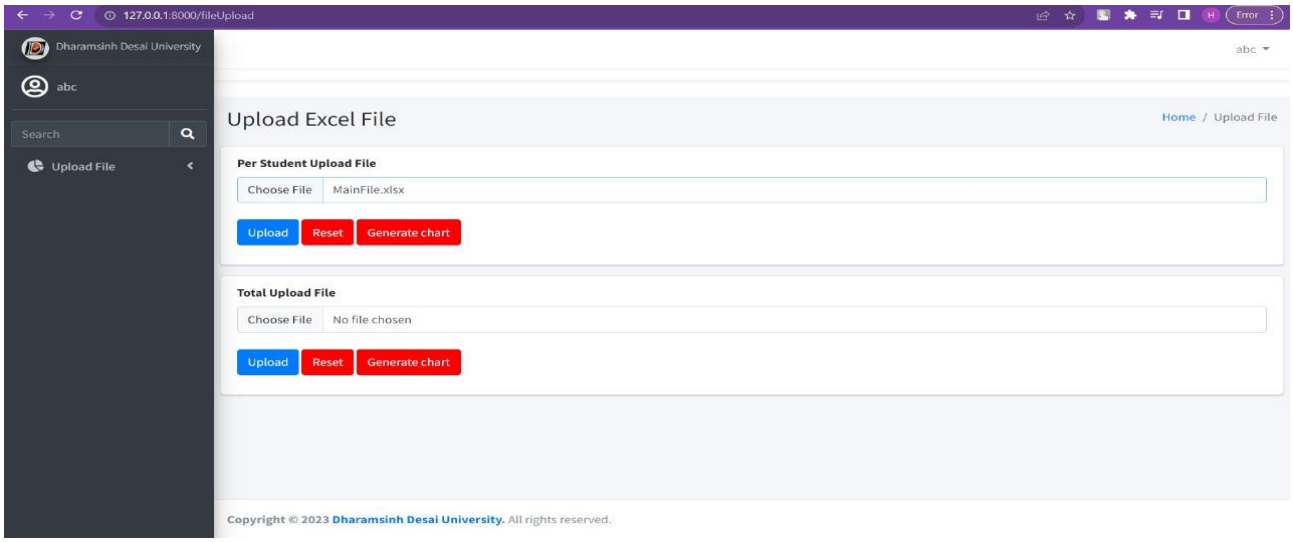

Fig 4.2. Upload File Page

Register Successfully Page

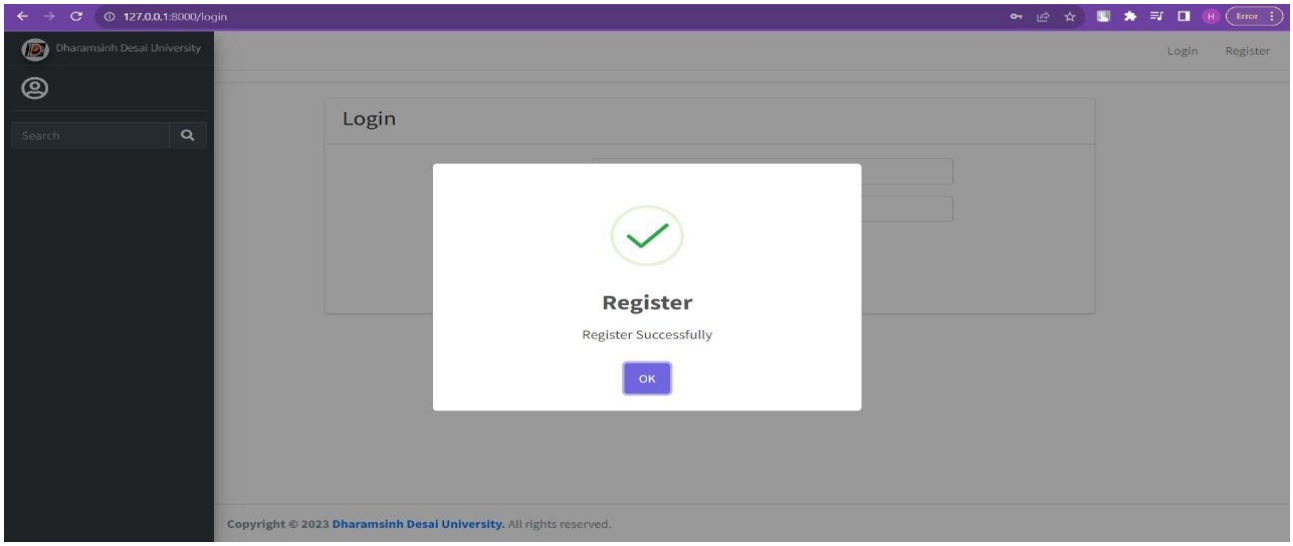

Fig 4.2. Register Successfully Page

Delete Table Page

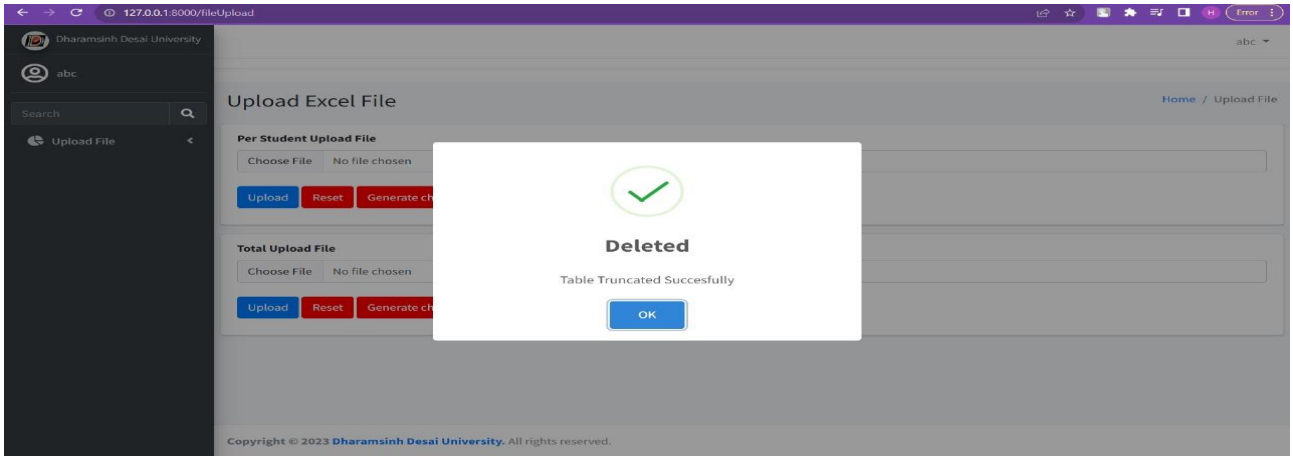

Fig 4.2. Delete Table Page

Chapter V
Implementation

> **Module:**

1. Users:

- > Users register by providing necessary details such as name, email, and password.
- > Registered data is sent to the specified authority for approval.
- > Upon approval, users receive confirmation and can log in using their credentials.
- > System dynamically generates questions based on Course Outcomes (CO) with assigned weightage of marks.
- > Users, upon logging in, access an exercise module with questions tailored to CO objectives.
- > Exercise questions are presented with randomized variations to ensure diverse assessment experiences.
- > Upon completing the exercise, users receive a detailed report summarizing their performance.
- > The report highlights strengths, areas for improvement, and suggests further study syllabus.
- > Marks are automatically allocated based on the COs attempted in the exams.
- > Weighted scoring reflects the importance of each CO in the overall assessment.

- Professors have a dedicated interface to enter detailed marks for each student.
- The system generates comprehensive reports summarizing entered marks for each student.
- Reports include graphical representations for quick visualization of performance metrics.
- Uploaded marks are securely stored in a central database, forming a universal table for easy cross-comparison.
- Enables academic administrators to assess overall CO performance across different courses and student cohorts.

Chapter VI
Test Case Design

- Manual testing was performed to find and fix the bugs in the development process.
- Some tests are given below but there are much more:

Sr No.	Test Scenario	Expected Results	Actual Results	Status
1	Registration	Confirmation Message	Confirmation Message	Success
2	Login	Login successfully.	When a user is successfully login than the chart option will be displayed.	Success
3	Upload	File upload successfully.	The file will be uploaded and stored details into the database.	Success

4	Login with the wrong credentials	Login failed message	The user will be prevented if he enters wrong credentials	Success
5	Selection of questions and their respective Cos with their marks	Dynamic input generation and storing of data	When user chooses questions and their respective Cos, marks will be entered and the data will be stored in the database	Success
6	Entering the marks of the student as per questions and their CO.	File generation	After entering the marks the detailed file of the same will be downloaded	Success

7	Upload	Downloaded File upload successfully.	Downloaded Files will be uploaded and details will be stored in a database.	Success
8	Analytical Chart Generation	The Bar Chart generated successfully	According to the stored data, the bar chart will be generated	Success
9	Reset database	Uploaded data will be removed from the database.	Uploaded data will be removed from the database	Success

Chapter VII
Conclusion

The functionalities are implemented in the portal, after understanding all the modules according to the requirements. Major functionalities are successfully implemented in the portal like the registration of users. a login system for the user after storing the data in the database, etc. The CO-Management system is a valuable tool for educational institutions that can help to improve the quality of education. By streamlining administrative tasks, reducing paperwork, and maintaining accurate data. Additionally, the CO-Management system can generate reports that can be used to track student progress and syllabus improvement. The CO-Management system can reduce the number of digital entries that educators and administrators have to deal with. This can save time and it can also help to reduce the risk of errors. The CO-Management system can generate reports that can be used to track student progress and identify areas for improvement. The project makes it simpler for teachers and administrators to create exam paper structures. After understanding, implementing, and coding the portal comprehensive testing was performed on the portal to determine the errors and possible flaws in the portal.

Limitations and Future Extensions of the System:

- Limitation:
  - In this portal, only the structure of the paper is generated.
  - Once the Excel file is uploaded, static formulae are used to analyze COs in the system.

- Future Extension:
  - There will be a functionality that will generate a paper's content with its CO-structure.
  - Using Static formulae, Dynamic formulae will be used to analyze COs at the logic side

Bibliography :

Book:

Stauffer, M. (2019). Laravel - up and running: A framework for building modern Php Apps. O'Reilly Media, Incorporated.

Websites:

> B. Zhou et al., "Smart table surface: A novel approach to pervasive dining monitoring," 2015 IEEE International Conference on Pervasive Computing and Communications (PerComm), St. Louis, MO, USA, 2015, pp. 155-162, doi: 10.1109/PERCOM.2015.7146522.

> A dependency manager for PHP (no date) Composer. Available at: http://getCOmposer.org/.
> Microsoft (2021) Download visual studio Code - MAC, Linux, windows, RSS. Available at: https://COde.visualstudio.COm/download.
> How to Install Composer on Windows - java point. (n.d.). www.javatpoint.COm. https://www.javatpoint.COm/how-to-install-COmposer-on-windows.
> GeeksforGeeks. (2023). How to install PHP in windows 10. GeeksforGeeks. http://geeksforgeeks.org/how-to-install-php-in-windows-10/
> Laravel - The PHP Framework for Web Artisans. (n.d.). https://laravel.COm/docs/10.x
> draw.io - free flowchart maker and diagrams online. (n.d.). https://app.diagrams.net/