

Project on

Student and Teacher Portal

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Object-Oriented Programming Lab
CSE 2112
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Introduction

The Teacher-Student Portal is a web-based application designed to usable platform for teachers and students.

The Teacher-Student Portal is a web-based application for teachers and students, offering features like assignment submissions, grade tracking, forums, course management, to-do lists, and schedules. It helps students manage their academic tasks and stay organized while simplifying course management and resource distribution for teachers. This portal creates a cohesive and efficient academic environment with all essential tools in one user-friendly interface.

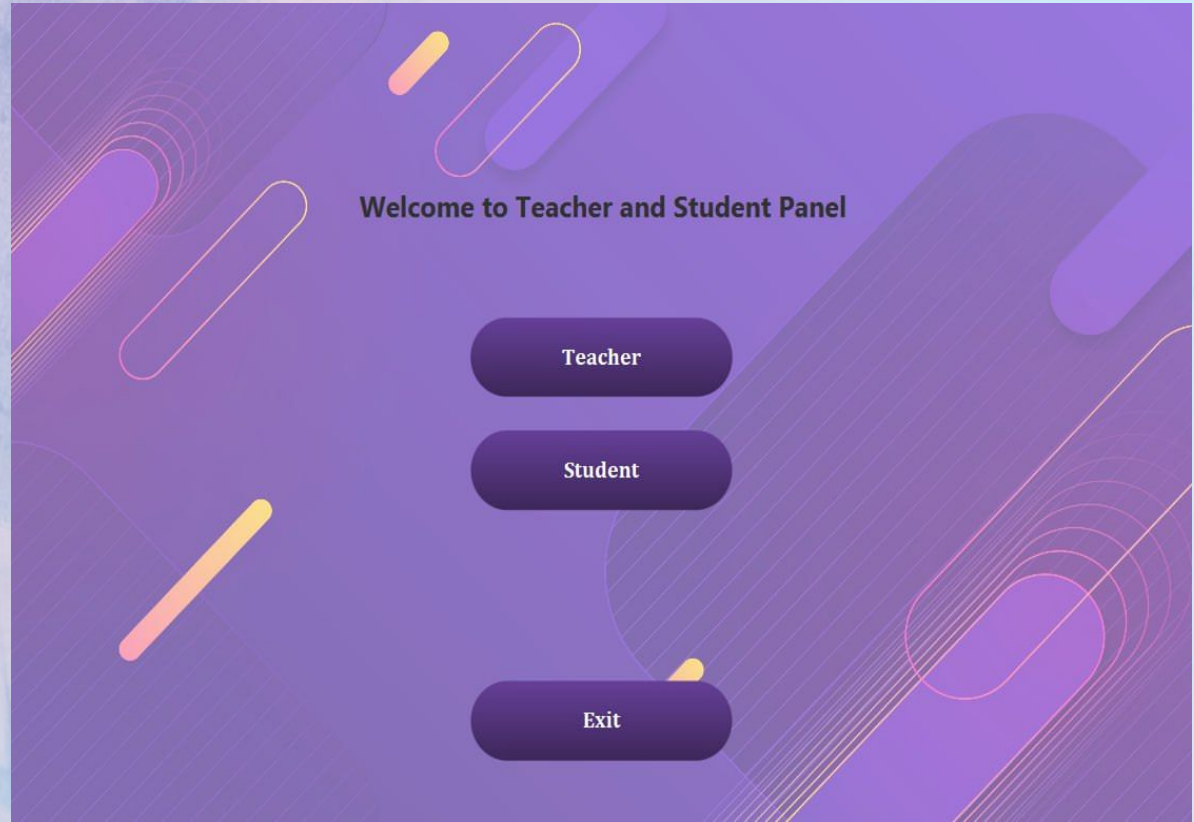
Tools

1. IDE: IntelliJ
2. Language: JAVA
3. Framework: JavaFx
4. Database: MySQL
5. Testing: Manual testing for the overall system functionality

Project Features

Roles:

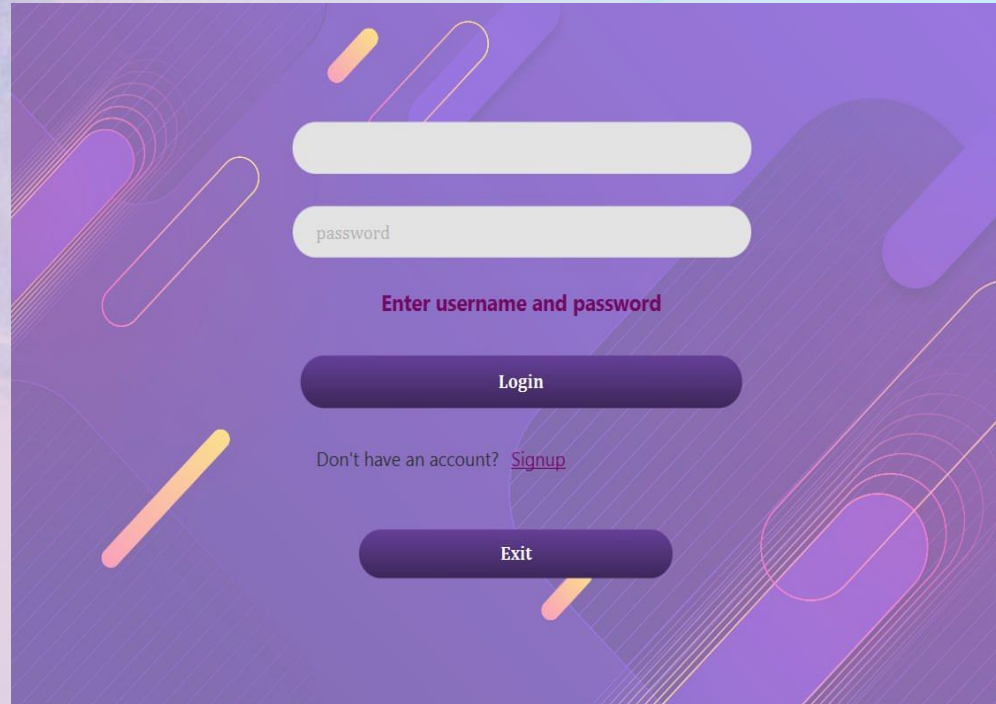
- **Teacher**
- **Student**



Student Portal

Login

The student portal's first UI is the login page, where users enter their username and password to access the portal, authenticated by the database.



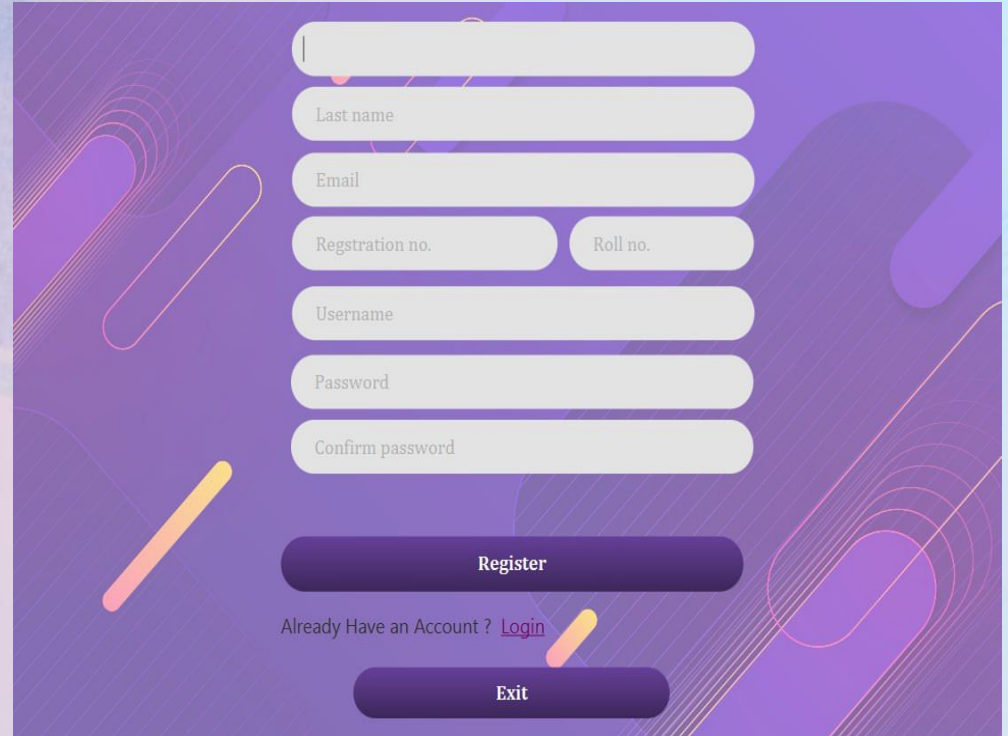
The login page UI is displayed on a purple background with abstract geometric shapes. It includes the following elements:

- A white input field for the username.
- A white input field for the password, with the placeholder text "password" visible.
- A red prompt text: "Enter username and password".
- A dark purple button labeled "Login".
- A link for users without an account: "Don't have an account? [Signup](#)".
- A dark purple button labeled "Exit".

Student Portal

Registration:

New students can register with their details on the registration page. Once registered, they can log in. The system focuses on database connection, authentication, exception handling, and directing users to the main platform.



The registration form is displayed on a purple background with abstract geometric patterns. It consists of several input fields and two buttons. The fields are arranged vertically: a first name field, a last name field, an email field, a registration number field, a roll number field, a username field, a password field, and a confirm password field. Below these fields is a large 'Register' button. Under the 'Register' button, there is a link for users who already have an account. At the bottom is an 'Exit' button.

Registration form fields:

- First name
- Last name
- Email
- Registration no.
- Roll no.
- Username
- Password
- Confirm password

Buttons:

- Register
- Already Have an Account ? [Login](#)
- Exit

Student Portal

Dashboard:

The dashboard integrates the main platform for students. After logging in, information is displayed on the right, with all other options on the left.



Student Portal

Routine:

The Routine section displays the class schedule, a dynamic to-do list, and a short text editor. Class schedules are created from course details and dates, while to-do lists are linked to the database for dynamic updates.

The screenshot displays the 'Routine' section of a student portal. At the top, there are two tabs: 'Return' and 'TO-DO'. The 'TO-DO' tab is active, showing a list of tasks. Each task consists of a text input field, a label (e.g., 'Todo 2', 'Todo 3'), and an 'Add' button. Below the tasks, there is a section for the class schedule, displaying the current date and time, and a list of classes with their times and locations. An 'Add' button is also present at the bottom of the schedule section.

Return TO-DO

Todo 2 Add

Todo 3 Add

Schedule 1 Add

Schedule 2 Add

Schedule 2 Add

Today is: Tuesday, May 19, 2024

9:50 AM: EEE-2103 SA

11:10 AM: OOP-2102 RAR

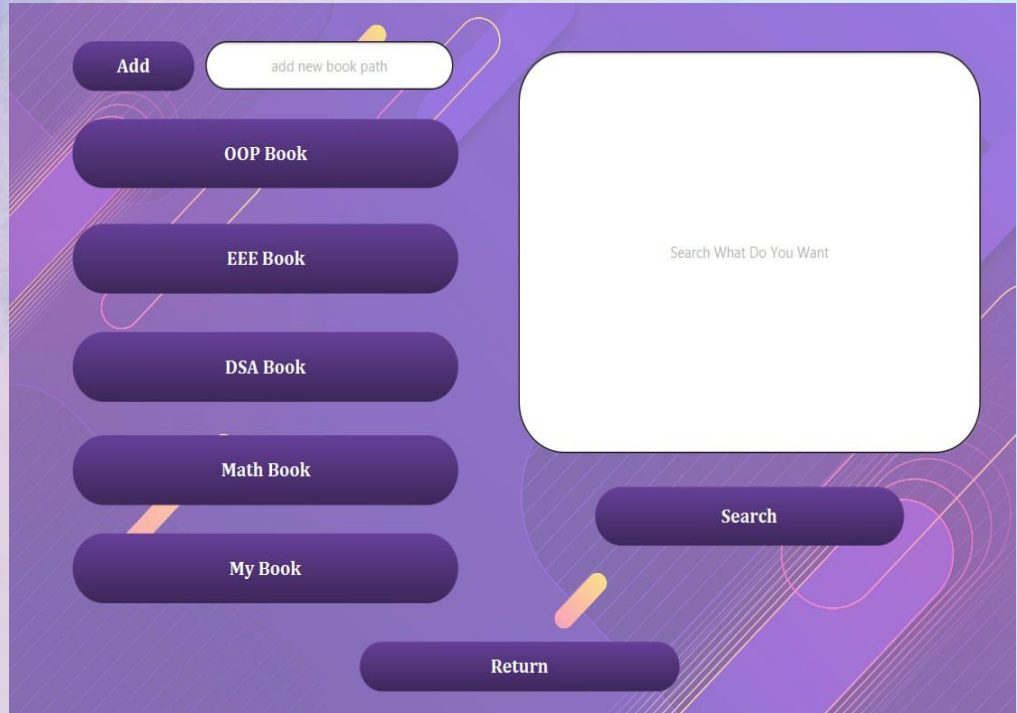
2:00 AM: EEE-2113 RAR

Add

Student Portal

Resources:

We extract our resources from local memory by creating objects for each course and dynamically adding new resources via a database. A connected search engine links to the web portal. We use a thread to open, read multiple files, and stay on the search engine.



Student Portal

CGPA calculator:

Calculates CGPA by entering course marks, showing grades and final CGPA, factoring in credits.



A digital form for calculating CGPA. It features a list of courses on the left, each with input fields for marks, credits, and grade. The courses are OOP, DSA, EEE, Math, GED, OOP Lab, DSA Lab, and EEE Lab. The OOP course has a unique input field for marks. Below the course list, the current CGPA is displayed as 0.00. At the bottom, there are 'Enter' and 'Return' buttons. The form is decorated with colorful paperclip and pencil icons.

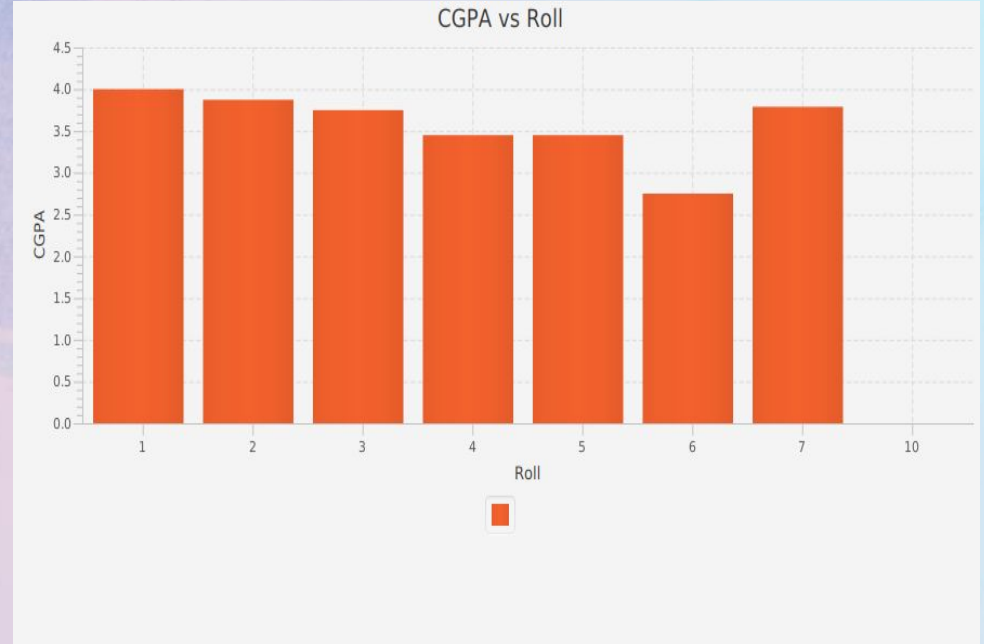
Course	Marks	Credits	Grade
OOP	<input type="text"/>	<input type="text" value="credit 3"/>	<input type="text" value="Grade"/>
DSA	<input type="text" value="marks out of 100"/>	<input type="text" value="credit 3"/>	<input type="text" value="Grade"/>
EEE	<input type="text" value="marks out of 100"/>	<input type="text" value="credit 3"/>	<input type="text" value="Grade"/>
Math	<input type="text" value="marks out of 100"/>	<input type="text" value="credit 3"/>	<input type="text" value="Grade"/>
GED	<input type="text" value="out of 100"/>	<input type="text" value="credit 2"/>	<input type="text" value="Grade"/>
OOP Lab	<input type="text" value="marks out of 50"/>	<input type="text" value="credit 1.5"/>	<input type="text" value="Grade"/>
DSA Lab	<input type="text" value="marks out of 50"/>	<input type="text" value="credit 1.5"/>	<input type="text" value="Grade"/>
EEE Lab	<input type="text" value="marks out of 50"/>	<input type="text" value="credit 0.75"/>	<input type="text" value="Grade"/>

CGPA: 0.00

Student Portal

CGPA Graph:

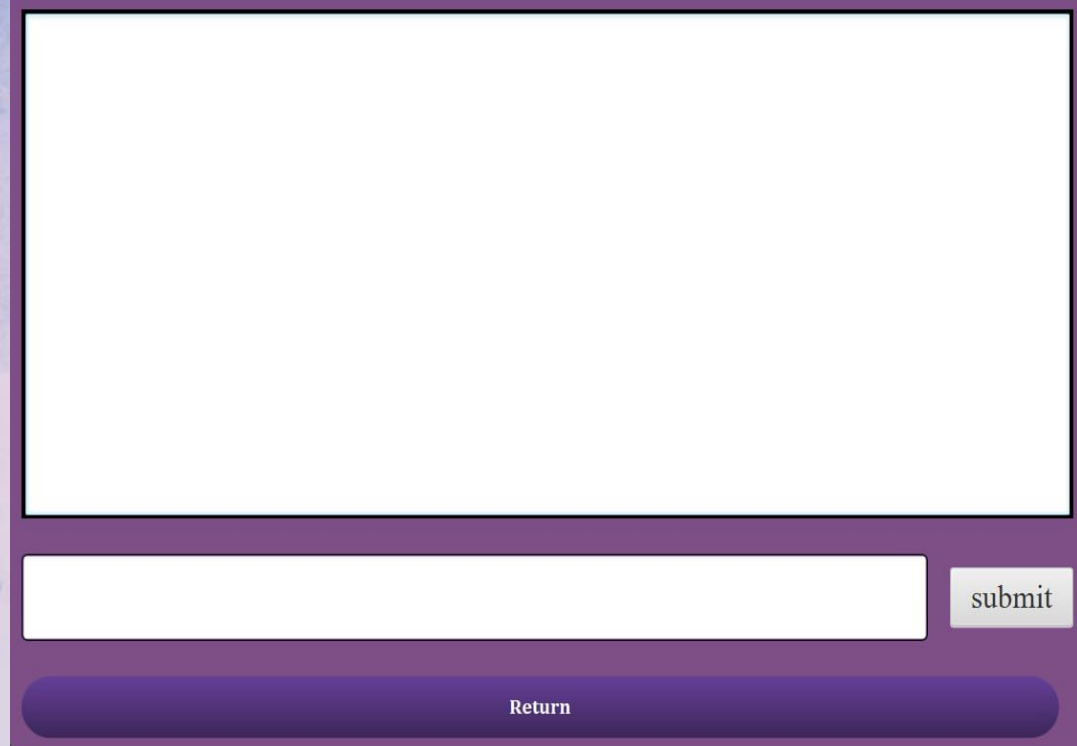
Extracts CGPA from the database to create a CGPA vs. roll number graph, displaying student ranks and competitiveness



Student Portal

ChatBot:

Designed to assist students through conversation. Redirects to the website for queries beyond its capabilities.



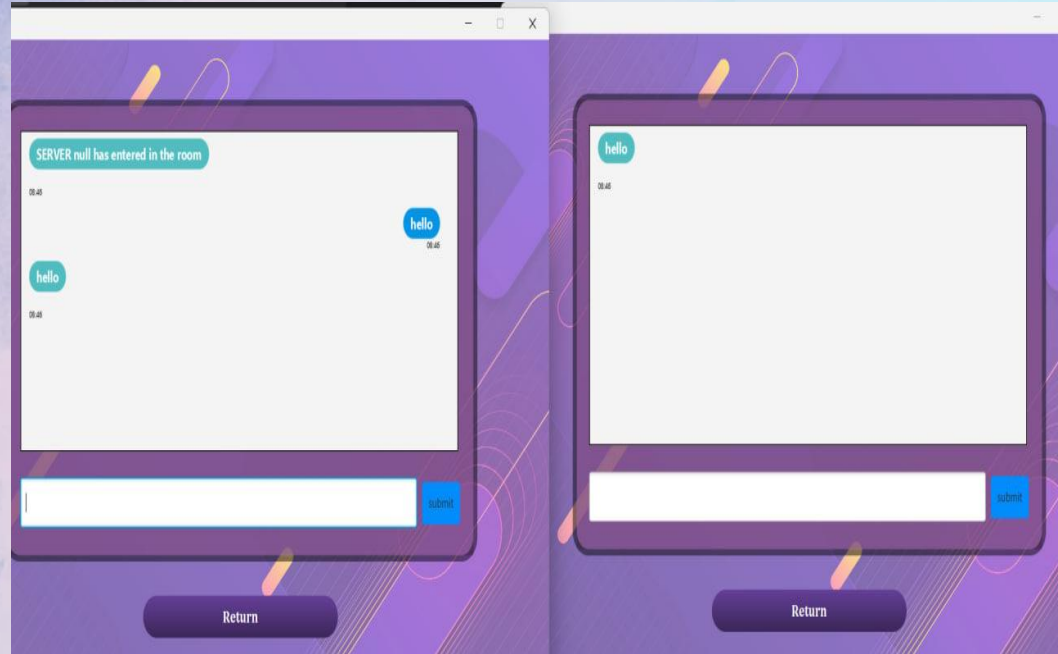
submit

Return

Student Portal

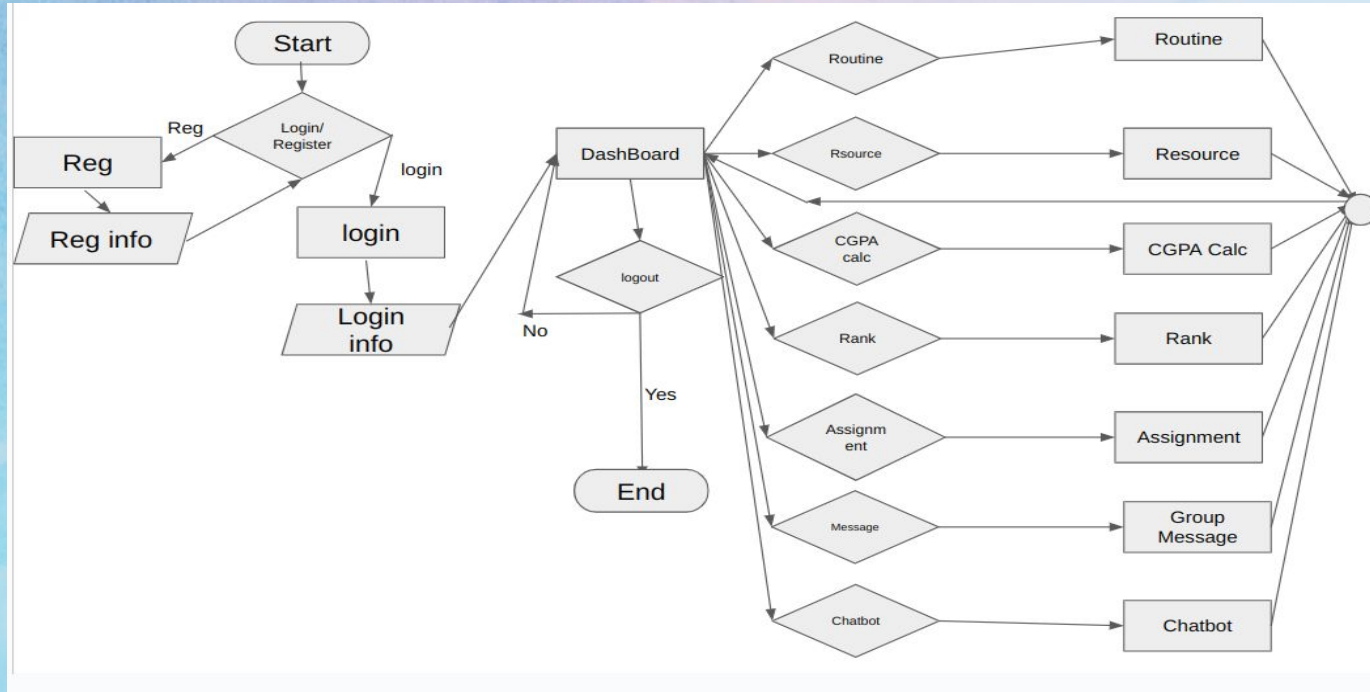
Message:

Facilitates communication and idea sharing among active students using thread and socket programming (server-client setup).



Student Portal

Workflow

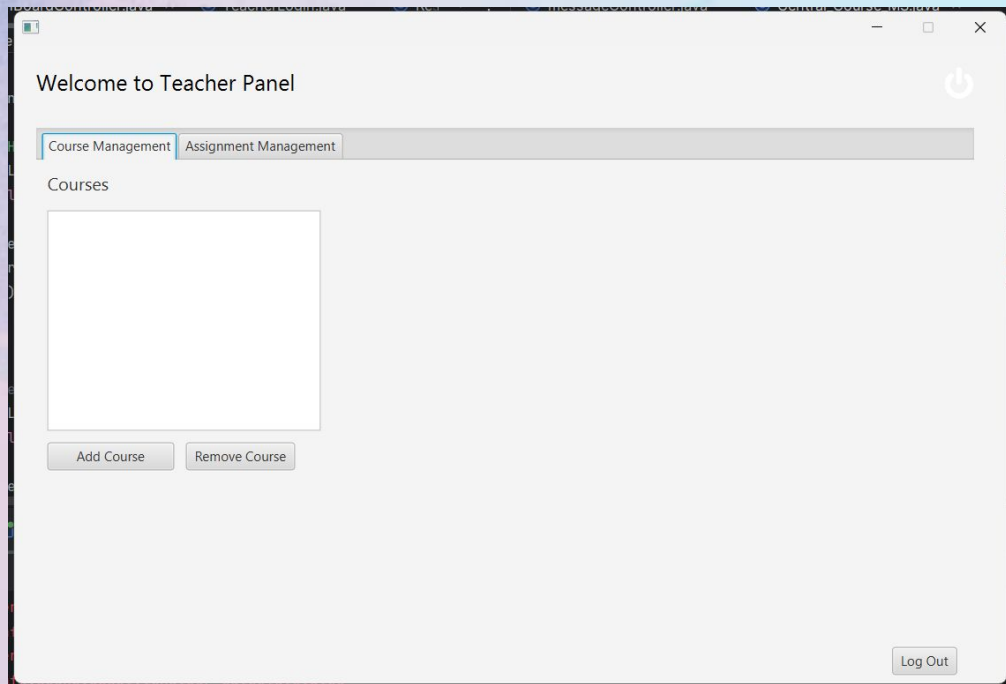


The student portal operates through interconnected pages, each modular and linked to a central database

Teacher's Portal

Dashboard:

In a teacher's dashboard there are two sections. One for course management and another for assignments management for each course.



Teacher's Portal

Available courses:

Courses can be added to
teacher's assigned course by
clicking **"Add Course"**.

Welcome to Teacher Panel

Course Management

Assignment Management

Courses

Remove Course

Available Courses

DSA

EEE

OOP

MATH

GED

DSA Lab

OOP Lab

EEE Lab

Add Selected Course

Close

Log Out

Teacher's Portal

Assigning tasks:

Assignments can be given to students by logging in as a teacher.

For example, here we are adding EEE assignment to all the students.

Welcome to Teacher Panel

Course Management

Assignment Management

Courses

OOP
EEE
DSA

Add Assignment

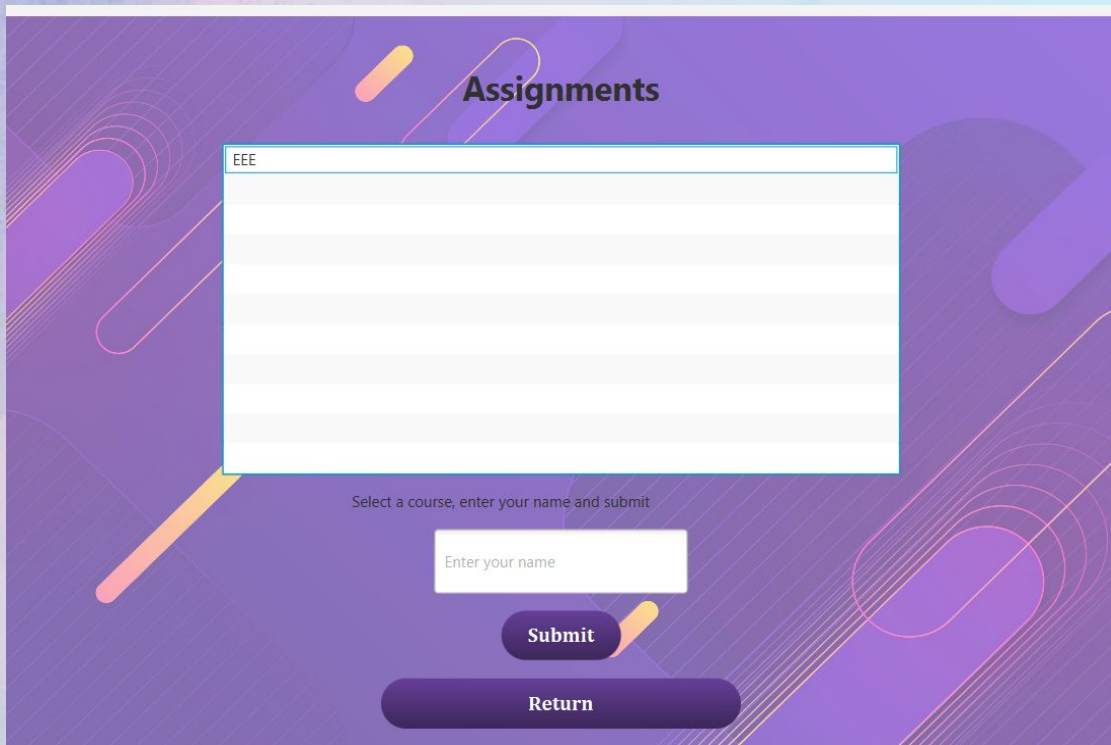
View Submissions

Added Successfully..!!

Teacher's Portal

Assignment added to
Student's panel:

After logging out from teacher's
panel and logging in into a
students profile, we can see
that the assignment is
uploaded successfully.



The screenshot shows a web interface for the 'Teacher's Portal' with a purple background and abstract geometric patterns. At the top right, the word 'Assignments' is displayed in a bold, black font. Below this, there is a large white rectangular area containing a table. The table has a header row with the text 'EEE' and several empty rows below it. Below the table, the text 'Select a course, enter your name and submit' is centered. Underneath this text is a white input field with the placeholder text 'Enter your name'. Below the input field are two buttons: a dark purple button with the text 'Submit' and a dark purple button with the text 'Return'.

EEE

Select a course, enter your name and submit

Enter your name

Submit

Return

Teacher's Portal

Option for viewing submissions:

A teacher can see who have submitted the given assignments.

Welcome to Teacher Panel

Course Management

Assignment Management

Courses

EEE

Add Assignment

View Submissions

Submissions

EEE Anirban

Close

Implementation of OOP and Design Principles

Our project emphasizes key object-oriented principles: polymorphism, abstraction, encapsulation, and inheritance. For CGPA calculation, polymorphism handles varying evaluation systems per course. Encapsulation securely manages student data, while inheritance facilitates feature inheritance as needed.

We follow the Open-Closed Principle, enabling extension without code modification. Adding semesters or students is seamless, maintaining existing code integrity. Our modular design fosters independent high-level modules, easing extension and maintenance. Subclassing enhances program flexibility and correctness.

Conclusion

In the early stages, our optimism for the student and teacher portal was high, envisioning a comprehensive platform for resources, course management, and results, fostering connectivity. Although currently limited to one semester, we aspire to expand it to encompass our entire undergraduate journey. Despite this, we've applied our OOP knowledge and honed our software design skills, tackling real-world challenges and devising solutions along the way.



Thank You