

EE468 DB-backed Web Application: University Management System (UMS)

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Description:

Welcome to our web-based university management system! Leveraging the existing university database developed throughout the semester, our project extends its functionalities with a focus on user authentication, and efficient data representation. Utilizing the Django web framework and MySQL, our system seamlessly integrates various components, facilitating data retrieval, manipulation, and presentation. The user interface, constructed using Django templates, ensures a user-friendly experience for administrators, professors, and students alike.

Key Features:

For Administrators:

- **Roster Management:** Easily search and organize lists of professors, with options to sort by name, department, or salary.
- **Salary Analysis:** Explore detailed tables showcasing minimum, maximum, and average salaries across departments.
- **Performance Evaluation:** Assess professors' performance by viewing key metrics such as course sections taught, students taught, funding secured, and papers published.

For Professors:

- **Course Section Management:** Effortlessly manage course sections taught, along with student enrollment details for each section.
- **Student Enrollment Inquiry:** Quickly retrieve lists of students enrolled in specific course sections for a chosen semester.

For Students:

- **Course Section Query:** Seamlessly search for and explore available course sections by department, year, and semester, aiding in course selection and planning.

1. User Manual

1.1 Login Page

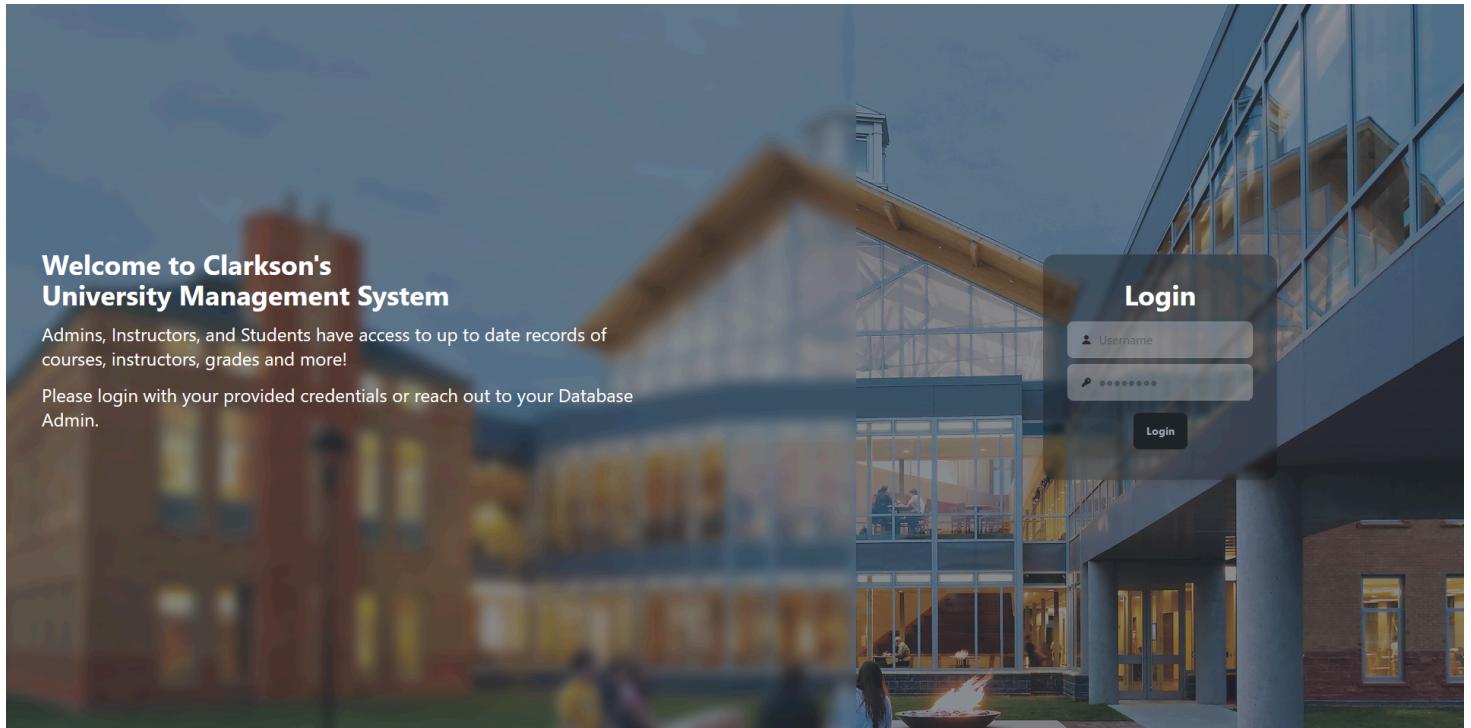


Figure 1: Home Page Login Screen

1.1.1. Upon launch and integration of admin, instructor, and student groups and users, the user will be redirected to the appropriate page based on specified credentials.

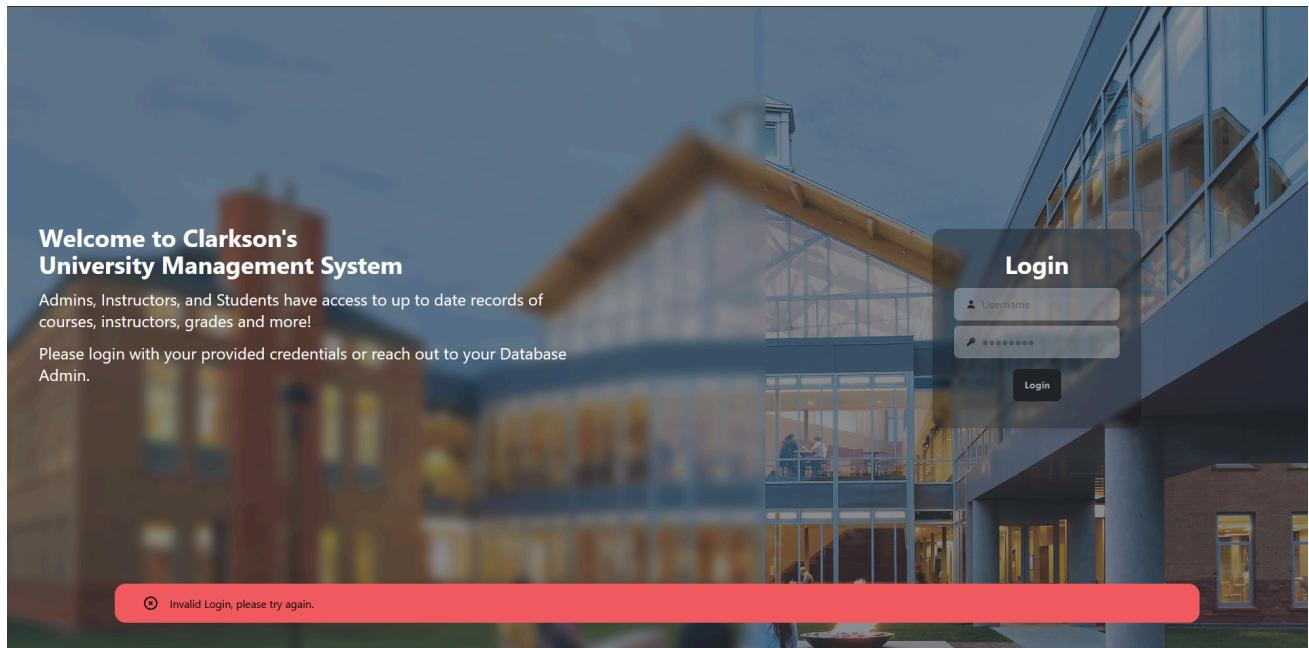


Figure 2: Home Page with Invalid Credentials

1.1.1.1. If the user enters invalid credentials a toast response will be displayed stating the error.

1.2. Admin Page

NOTE: TABLES ON PAGE ARE POPULATED ONCE SORT IS PRESSED

The screenshot shows the Admin Dashboard interface. It features three main sections:

- All Instructors:** A card with a dropdown menu for "Sort By" and a "Sort" button. Below the button are columns for Name, Department, and Salary.
- Department Salary Summary:** A card with a dropdown menu for "Summary Type" and a "Sort" button. Below the button are columns for Department and Salary.
- Instructor Performance:** A card with filters for Instructor, Year, Semester, and a Search button. Below the filters are columns for Instructor, Total Selections, Num. Students, Total Funding, and Publishes Papers.

Figure 3: Default Admin Page

1.2.1. After a successful login with admin credentials, the user will be redirected to the admin page which has three main functionality components as mentioned on page 1.

1.2.1.1. **Roster Management**

1.2.1.2. **Salary Analysis**

1.2.1.3. **Performance Evaluation**

Admin Dashboard

All Instructors

Name	Department	Salary
Banerjee	CS	100000
Conlon	OIS	115000
Gohl	IA	78000
Hou	ECE	100000
Hussain	ECE	90000
Imtiaz	ECE	115000
Khondker	ECE	125000
King	CHE	200000
Lee	ECE	115000
Liu	CS	12345
Liu	ECE	135000
Lynch	CS	112000
Madel	CS	80000
Martin	MA	100000
Mandal	MA	123000

Figure 4: Roster Management Execution

1.2.2. Roster Management by Name: Easily search and organize lists of professors, with options to sort by name, department, or salary. Use the dropdown to select whether you want to sort by Name, Department, or Salary

All Instructors

Sort By:

Name	Department	Salary
Banerjee	CS	100000
Conlon	OIS	115000
Gohl	IA	78000
Hou	ECE	100000
Hussain	ECE	90000
Imtiaz	ECE	115000
Khondker	ECE	125000
King	CHE	200000
Lee	ECE	115000
Liu	CS	12345
Liu	ECE	135000
Lynch	CS	112000
Madel	CS	80000
Martin	MA	100000
Mandal	MA	123000

Department Salary Summary

Min

Department	Salary
CHE	200000
COMM	125000
OIS	115000
PY	115000
PH	105000
MA	99000
HIST	80000
IA	78000
ECE	15000
CS	12345
None	None

Instructor Performance

Figure 5: Salary Analysis Execution

1.2.3. Salary Analysis by Minimum: Explore detailed tables showcasing minimum, maximum, and average salaries across departments. Use the drop down to select whether you want to display the minimum, maximum, or Average salary for each department.

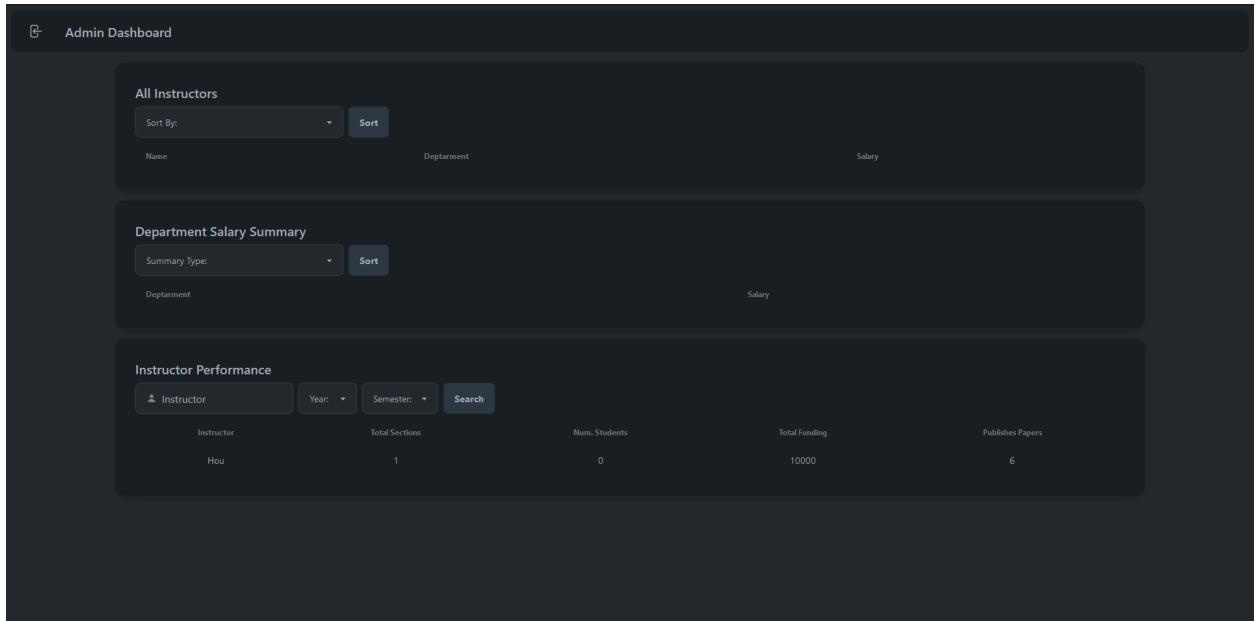


Figure 6: Instructor Performance Execution

1.2.4. Instructor Performance: Assess professors' performance by viewing key metrics such as course sections taught, students taught, funding secured, and papers published. Input a Instructors Name as well as the Year and Semester you are targeting for the performance metrics.

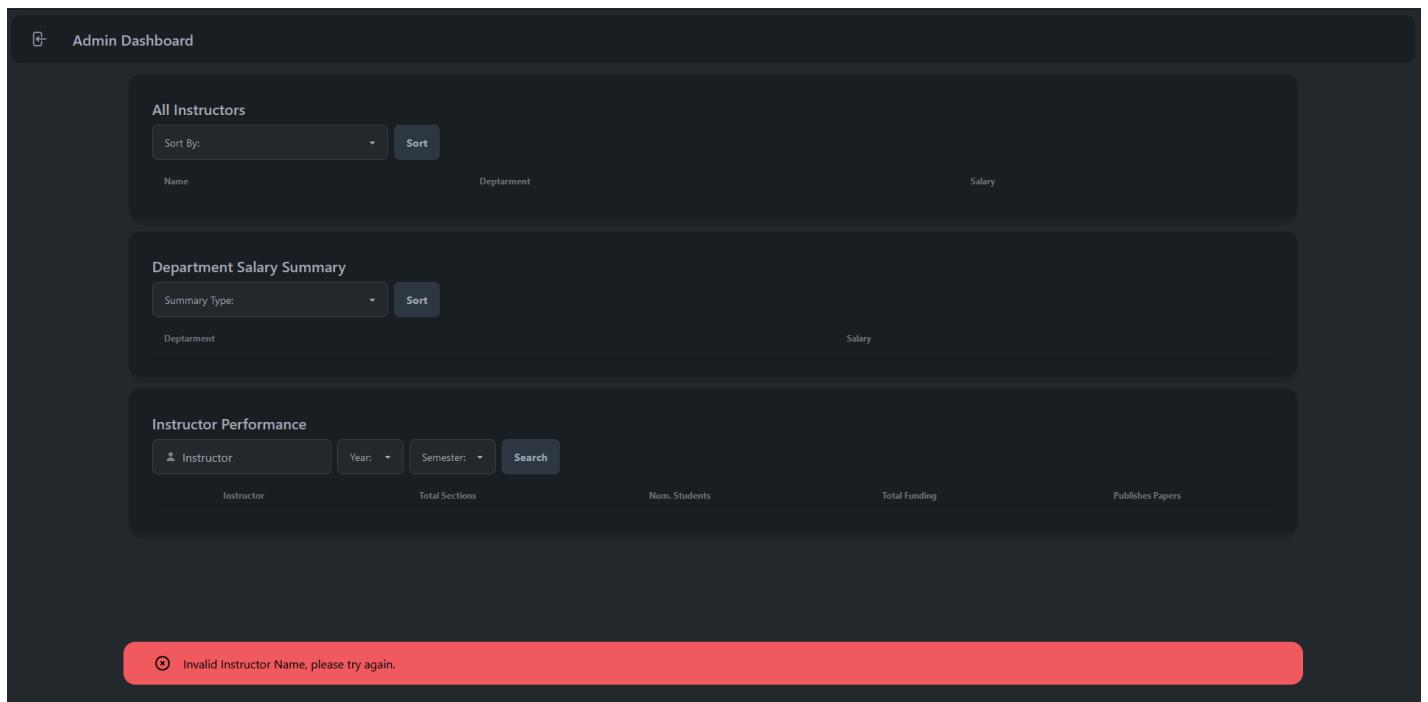


Figure 7: Instructor Performance with Invalid Instructor Name

1.2.4.1. If the User inputs an invalid Instructor name there will be an error message displayed alerting the user.

1.3. Instructor Page

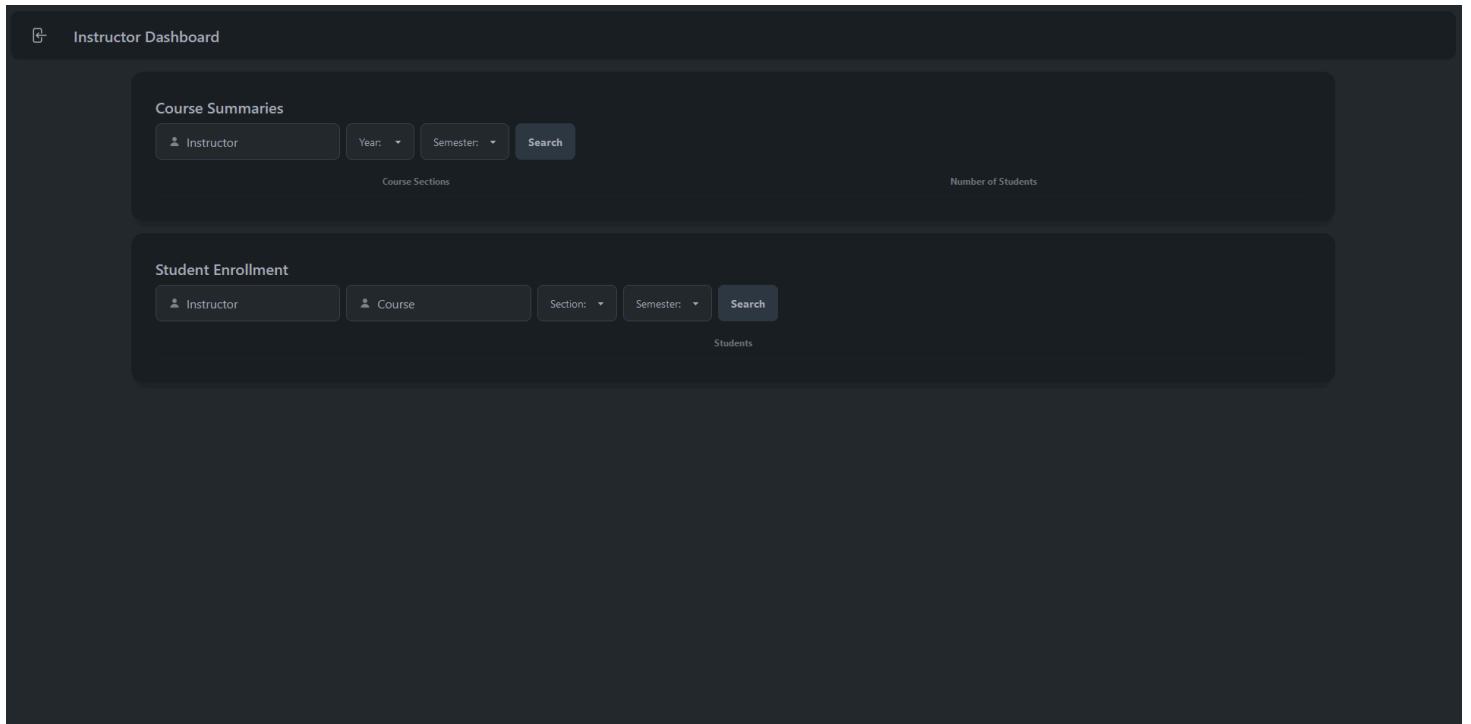


Figure 8: Instructor Default Dashboard

1.3.1. After a successful login with instructor credentials, the user will be redirected to the instructor page. There are two main features of this page:

1.3.1.1. Course Section Management

1.3.1.2. Student Enrollment Inquiry

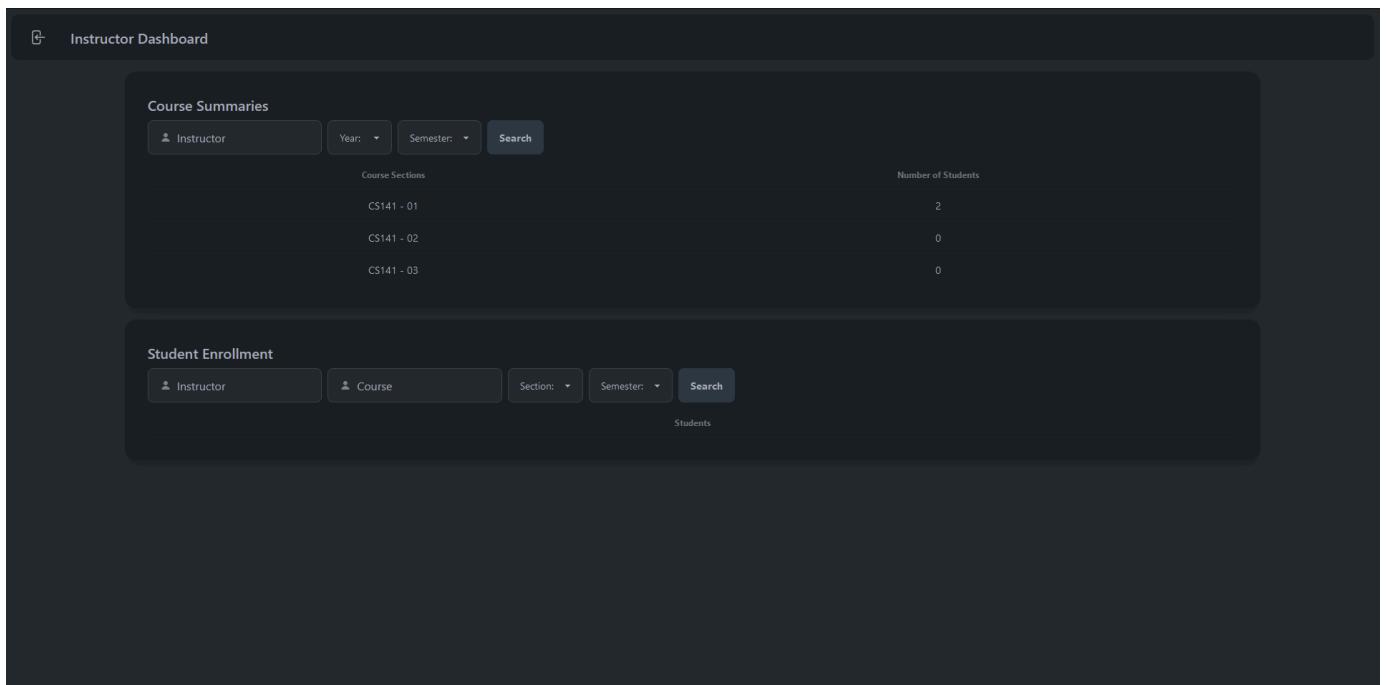


Figure 9: Course Section Management Execution

1.3.2. Course Section Management: Effortlessly manage course sections taught, along with student enrollment details for each section. Inputting an Instructor's name and as well the desired course and semester you will be returned with the list of courses and number of students in the classes.

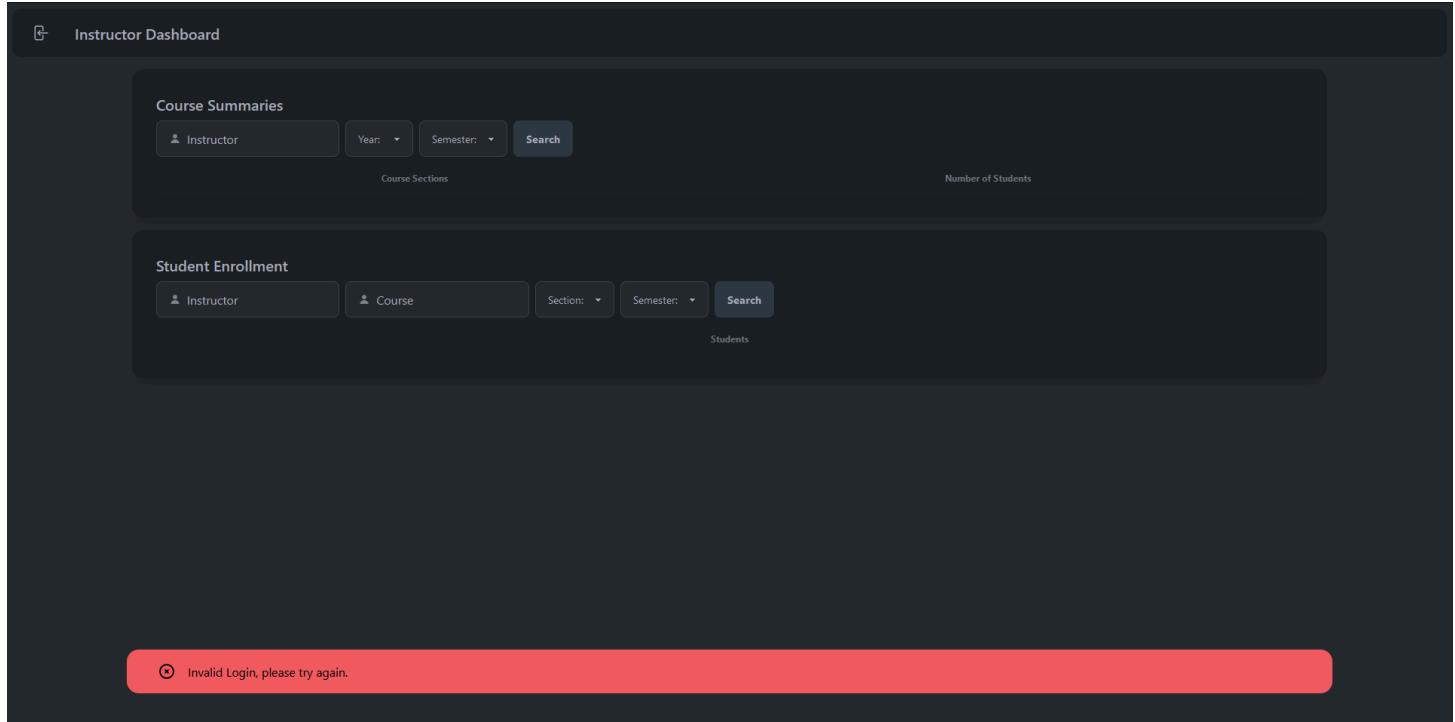


Figure 10: Course Section Management with Invalid Instructor Name

1.3.2.1. If the User inputs an invalid Instructor name there will be an error message displayed alerting the user.

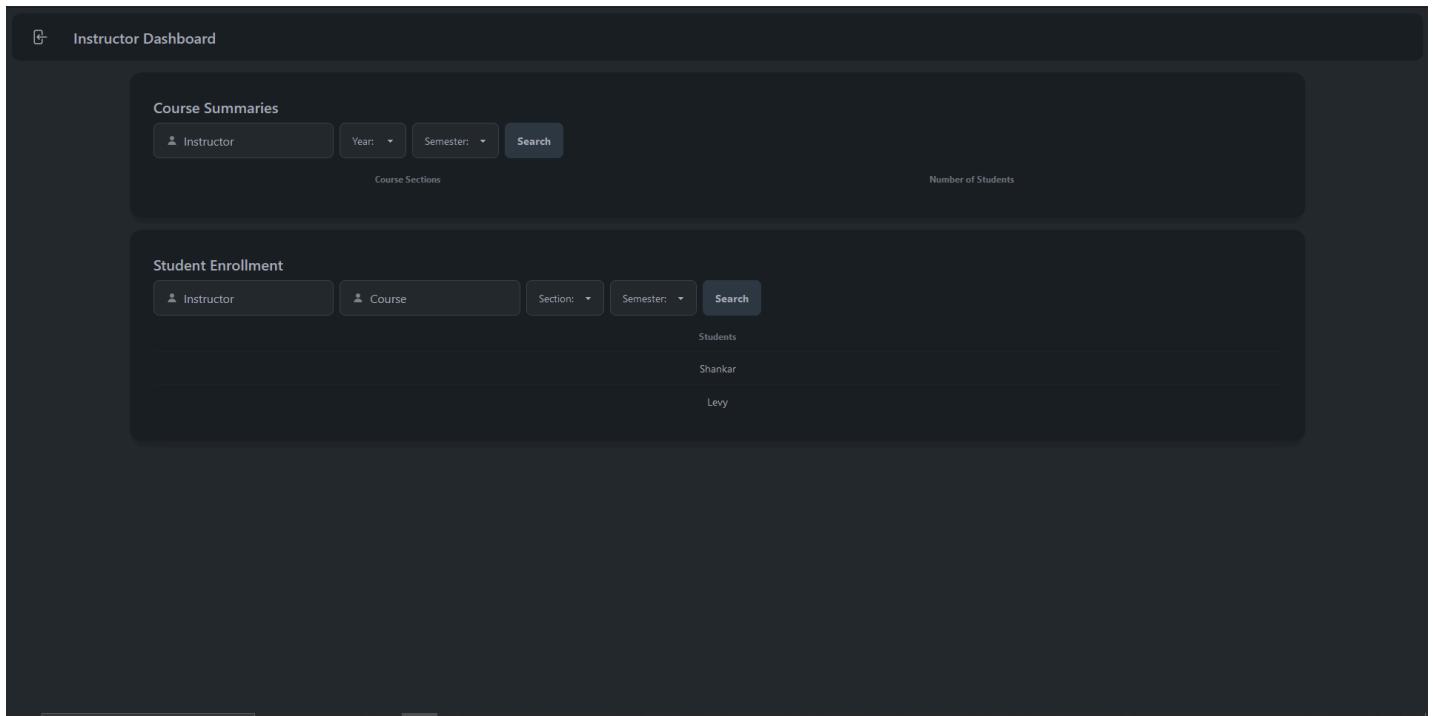


Figure 11: Student Enrollment Inquiry Execution:

1.3.3. Student Enrollment Inquiry Execution: Quickly retrieve lists of students enrolled in specific course sections for a chosen semester. Enter an Instructor's Name, Course, Section number and semester and a list of students will be returned:

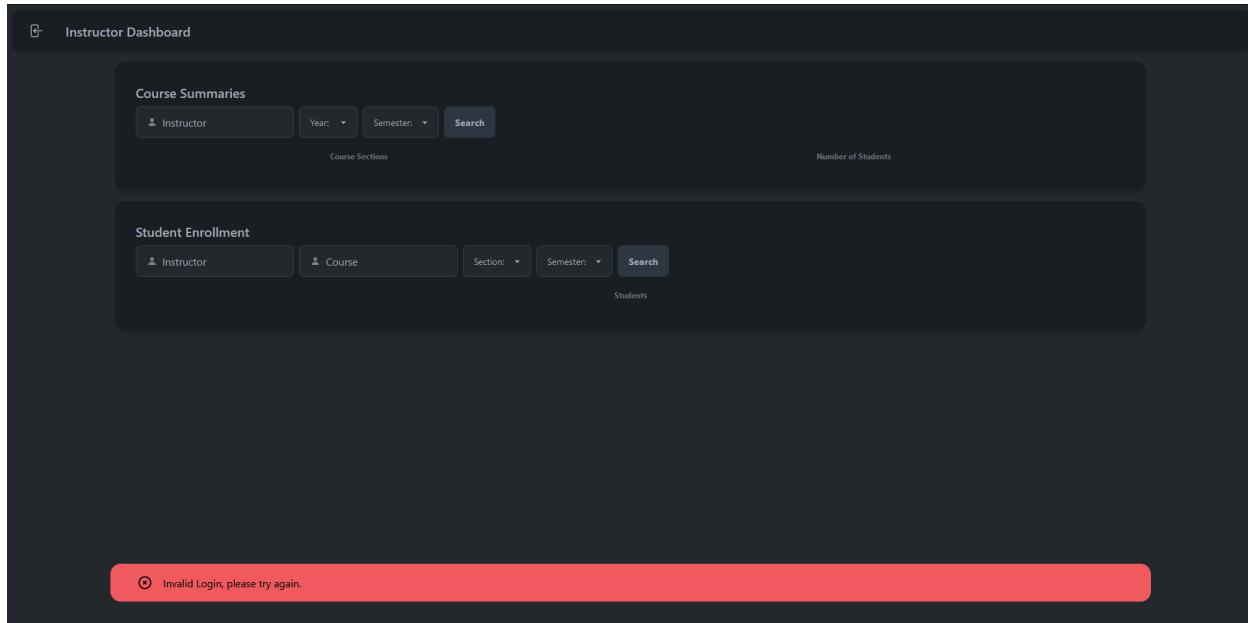


Figure 12: Student Enrollment Inquiry Execution with Invalid Input

1.3.3.1. If the User inputs an invalid Instructor name there will be an error message displayed alerting the user.

1.4. Student Page

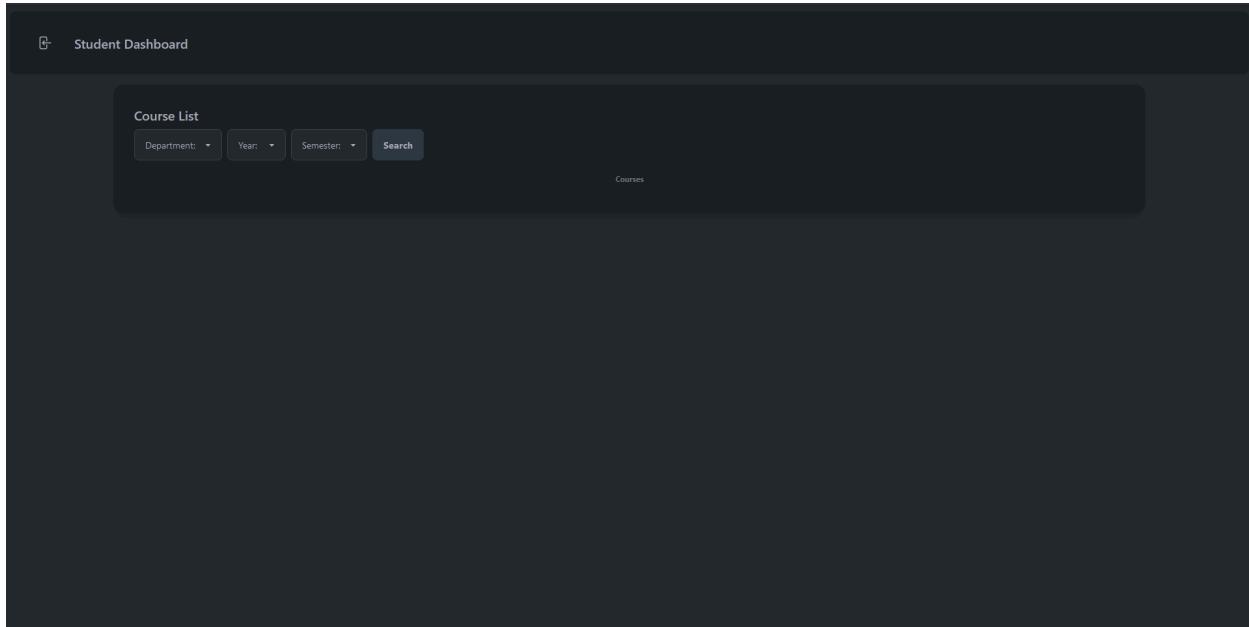


Figure 13: Student Default Page

1.4.1. After a successful login with student credentials, the user will be redirected to the studentpage. There is one main features of this page:

1.4.1.1. Course Section Query

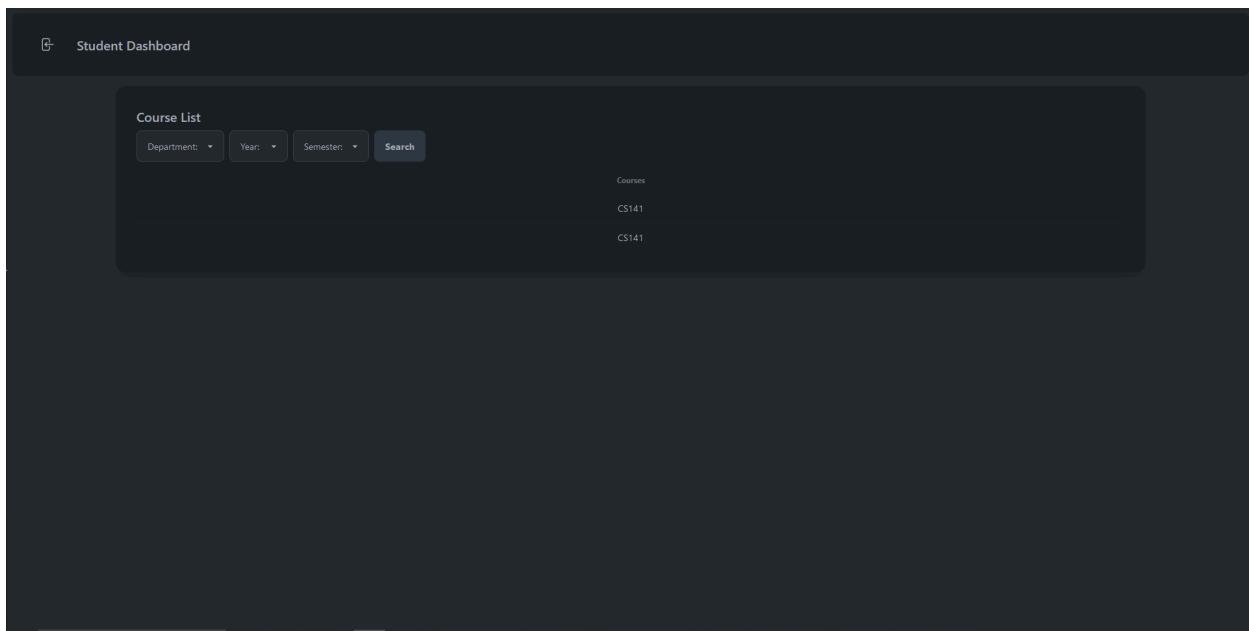


Figure 14: Course Section Query Execution

1.4.2. Course Section Query: Seamlessly search for and explore available course sections by department, year, and semester, aiding in course selection and planning. Click the drop down to get a list of departments and then select a desired year and semester.