

# **Project 2: Database Backend Web Application**

## **CS460 - User Manual**

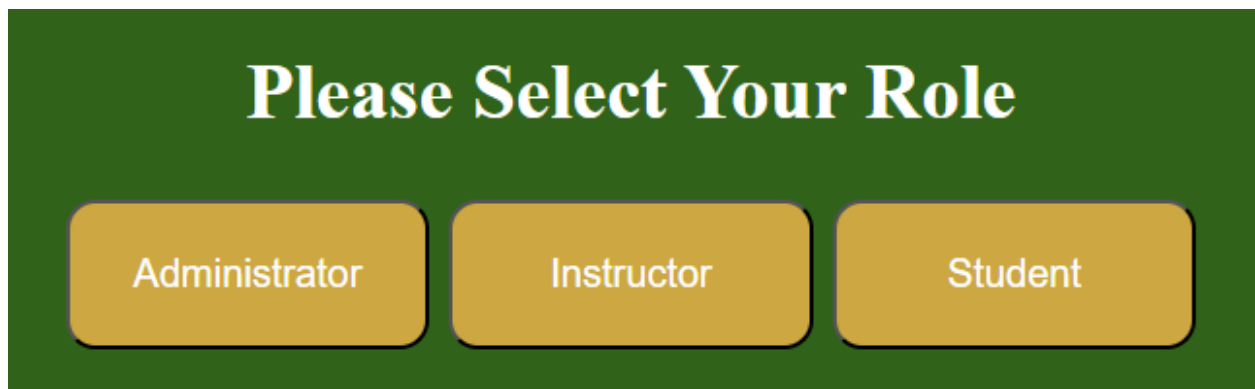
Members: Megan Edwards, Michael Bencivenga, Kell Grady, and Naida Torres

<b>Types of Users.....</b>	<b>3</b>
<b>Navigation and Functionality.....</b>	<b>3</b>
Administrator.....	3
Instructor.....	5
Student.....	7

The Database Backend Web Application is a web-based application used for Project 2 as part of CS460: Database Systems at Clarkson University. This system makes use of the university database created and worked on throughout the Spring 2024 semester. The system utilizes the Django web framework to connect to MySQL and connect all components together. Using Django, the system loads data from the database, represents the data as Python objects, and creates the web page to actually display the data. The user interface is built using Django templates, which is what this user manual will go over.

## Types of Users

When a user begins to run the system, and goes to the Users/ URL, they will be met by *Figure 1*. The user is able to choose between the roles **Administrator**, **Instructor**, and **Student**. When clicking on any of the options, the user will automatically re-direct to the respective Administrator/, Instructor/, and Student/ URLs.



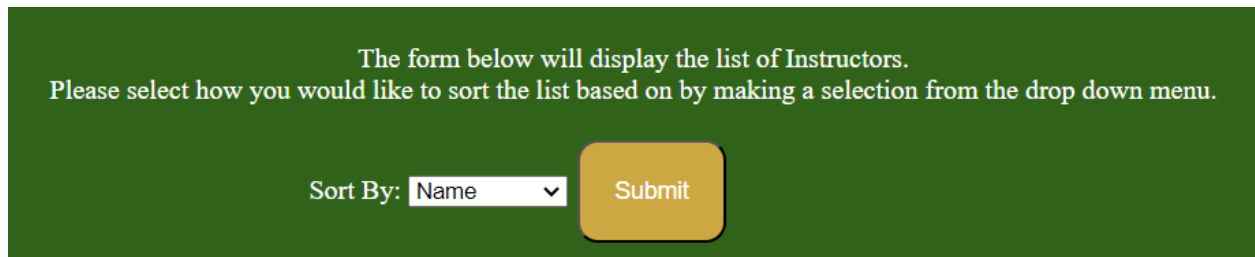
**Figure 1: Startup Page**

## Navigation and Functionality

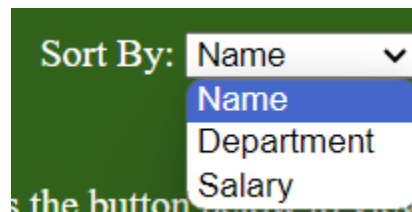
### Administrator

While within the administrator view, under the Administrator/ URL, the user is able to perform three different queries.

The first query is shown in *Figure 2*, which allows the user to create a list of professors, with the option to sort the list by either their name, department, or salary. These options are presented to the user via a drop down menu, as seen in *Figure 3*.

A screenshot of a web form on a dark green background. At the top, white text reads: "The form below will display the list of Instructors. Please select how you would like to sort the list based on by making a selection from the drop down menu." Below this text, there is a label "Sort By:" followed by a white dropdown menu currently showing "Name" with a small downward arrow. To the right of the dropdown is a yellow-orange rounded rectangular button with the word "Submit" in black text.

**Figure 2: First Administrator View Query**



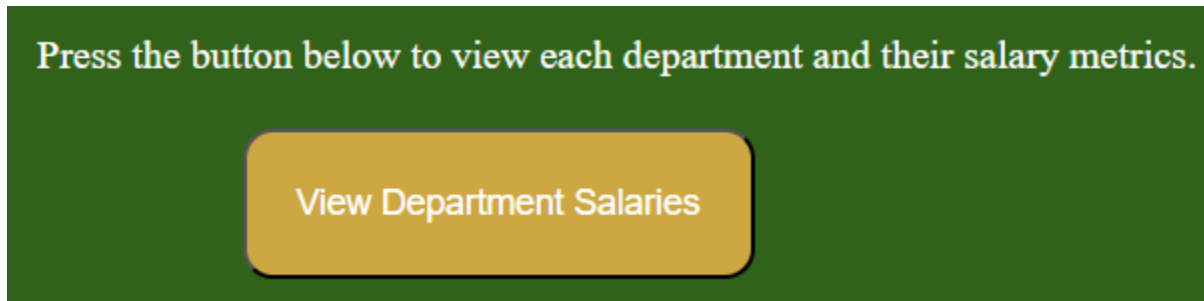
**Figure 3: First Administrator View Drop Down Menu**

When clicking on the “Submit” button, the user will be redirected to the results page under the InstructorList/ URL, as shown in Figure 4.

ID	Name	Department	Salary	Funding
2441	Banerjee	CS	100000	None
20560	Conlon	OIS	115000	None
43203	Gohl	IA	78000	None
12345	Hou	ECE	100000	17219
10102	Hussain	ECE	90000	None
37801	Imtiaz	ECE	115000	None
22904	Khondker	ECE	125000	None
35420	King	CHE	200000	None
65623	Lee	ECE	115000	None
45678	Liu	CS	12345	None
54545	Liu	ECE	135000	None
16498	Lynch	CS	112000	None
34567	Maciel	CS	800000	None
23456	Martin	MA	100000	None
12371	Mondal	MA	123000	None
34568	NEW MA	MA	99000	None
45679	New Prof.	None	None	None
13579	Ramsdell	PH	105000	None
85732	Reynolds	MA	108000	None
12370	Skufca	MA	132000	None
5133	Stein	HIST	80000	None
11001	Swati	ECE	15000	None
89067	TAMON	CS	120000	None
21433	Thorpe	CS	140000	9896
28345	York	COMM	125000	None
28346	Zhang	PY	115000	None

**Figure 4: First Administrator Query Result (Name)**

The second query is shown in *Figure 5*, which allows the user to view a table that includes the minimum, maximum, and average salaries for each department.



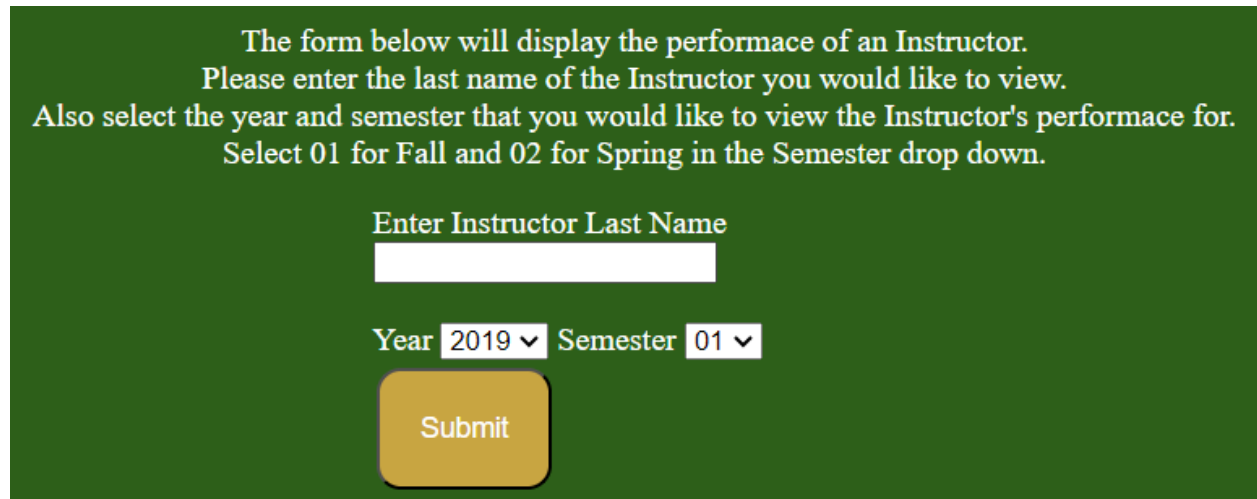
**Figure 5: Second Administrator View Query**

When clicking on the “View Department Salaries” button, the user will be redirected to the results page under the DeptSals/ URL, as shown in Figure 6.

Department	Min Salary	Max Salary	Average Salary
None	None	None	None
CHE	200000	200000	200000
COMM	125000	125000	125000
CS	12345	800000	214058
ECE	15000	135000	99286
HIST	80000	80000	80000
IA	78000	78000	78000
MA	99000	132000	112400
OIS	115000	115000	115000
PH	105000	105000	105000
PY	115000	115000	115000

**Figure 6: Second Administrator Query Result**

The third query is shown in *Figure 7*, which allows the user to provide a professor's name, an academic year, and a semester to view the performance of said professor. The user will enter a professor's last name, also reiterated on the page itself as shown in *Figure 7*, via a word box and pick an academic year and semester via drop down menus. The fall semester is represented by "01" and the spring semester by "02," which is also reiterated on the page itself.



The form below will display the performance of an Instructor.  
Please enter the last name of the Instructor you would like to view.  
Also select the year and semester that you would like to view the Instructor's performance for.  
Select 01 for Fall and 02 for Spring in the Semester drop down.

Enter Instructor Last Name

Year  Semester

**Figure 7: Third Administrator View Query**

When clicking on the "Submit" button, the user will be redirected to the results page under the Performance/ URL, as shown in *Figure 8*. The results view includes the number of course sections taught during the semester, the number of students taught, the total dollar amount of funding the professor has secured, and the total number of papers the professor has published.

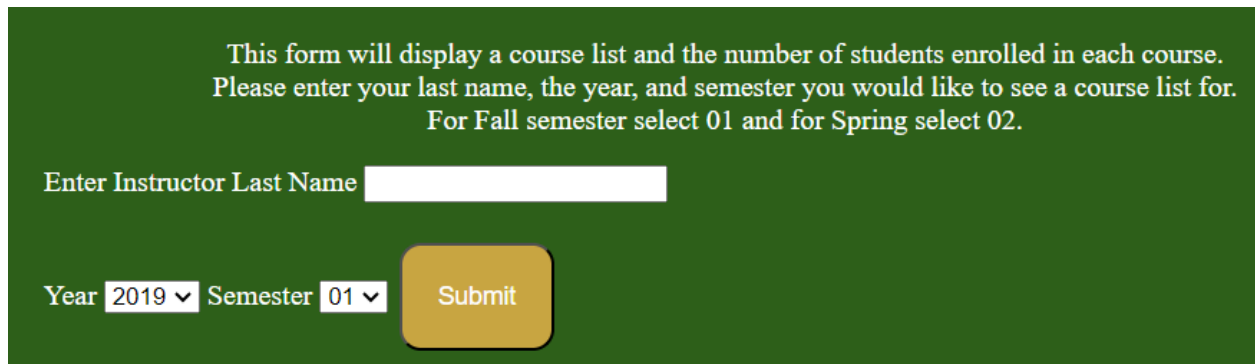
Number of Courses	Number of Students	Total Funding	Total Papers
2	3	9896	0

**Figure 8: Third Administrator Query Result (Thorpe, 2019, 01)**

## Instructor

While within the instructor view, under the Instructor/ URL, the user is able to perform two different queries.

The first query is shown in *Figure 9*, which allows the user to input a professor's last name, academic year, and semester to view a list of course sections and the number of students enrolled in that section. The user inputs the professor's last name via a word box and an academic year and semester via a drop down menu. The fall semester is represented by "01" and the spring semester by "02," which is also reiterated on the page itself.



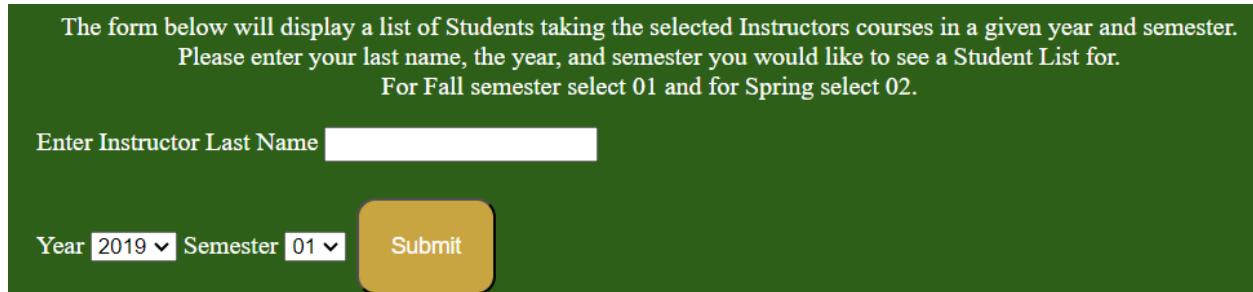
**Figure 9: First Instructor View Query**

When clicking the "Submit" button, the user will be redirected to the results page under the CourseList/ URL, as shown in Figure 10.

Course ID	Section ID	Student Count
CS141	01	9
CS141	02	9
CS141	03	6

**Figure 10: First Instructor Query Result (Thorpe, 2019, 01)**

The second query is shown in *Figure 11*, which allows the user to input a professor's last name, academic year, and semester to view a list of students enrolled in said course section. The user inputs the professor's last name via a word box and an academic year and semester via a drop down menu. The fall semester is represented by "01" and the spring semester by "02," which is also reiterated on the page itself.



The form below will display a list of Students taking the selected Instructors courses in a given year and semester.  
Please enter your last name, the year, and semester you would like to see a Student List for.  
For Fall semester select 01 and for Spring select 02.

Enter Instructor Last Name

Year  Semester

**Figure 11: Second Instructor View Query**

When clicking the "Submit" button, the user will be redirected to the results page under the StudentList/ URL, as shown in Figure 12.

Name	Course ID	Section ID
Williams	CS141	01
Zhang	CS141	02
Bourikas	CS141	02

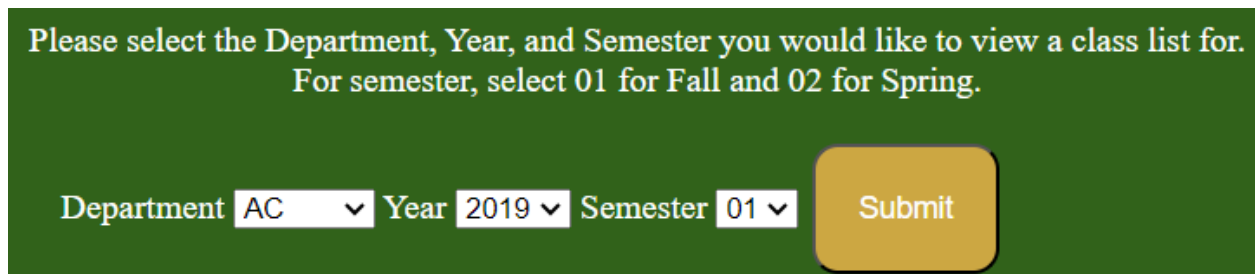
**Figure 12: Second Instructor Query Result (Thorpe, 2019, 01)**

## Student

While within the student view, under the Student/ URL, the user is able to perform a single query.



The query is shown in *Figure 13*, which allows the user to input a department, academic year, and semester to view a list of course sections for that specific department within that semester chosen. The user inputs all parameters via a drop down menu. The fall semester is represented by “01” and the spring semester by “02,” which is also reiterated on the page itself.

A green rectangular form with white text. At the top, it says "Please select the Department, Year, and Semester you would like to view a class list for. For semester, select 01 for Fall and 02 for Spring." Below this, there are three dropdown menus: "Department" with "AC" selected, "Year" with "2019" selected, and "Semester" with "01" selected. To the right of these menus is a yellow "Submit" button.

Please select the Department, Year, and Semester you would like to view a class list for.  
For semester, select 01 for Fall and 02 for Spring.

Department AC ▼ Year 2019 ▼ Semester 01 ▼

**Figure 13: Student View Query**

When clicking the “Submit” button, the user will be redirected to the results page under the StudentResults/ URL, as shown in Figure 14.

Course ID	Section ID
CS141	01
CS141	02

**Figure 14: Student Query Result (CS, 2019, 01)**