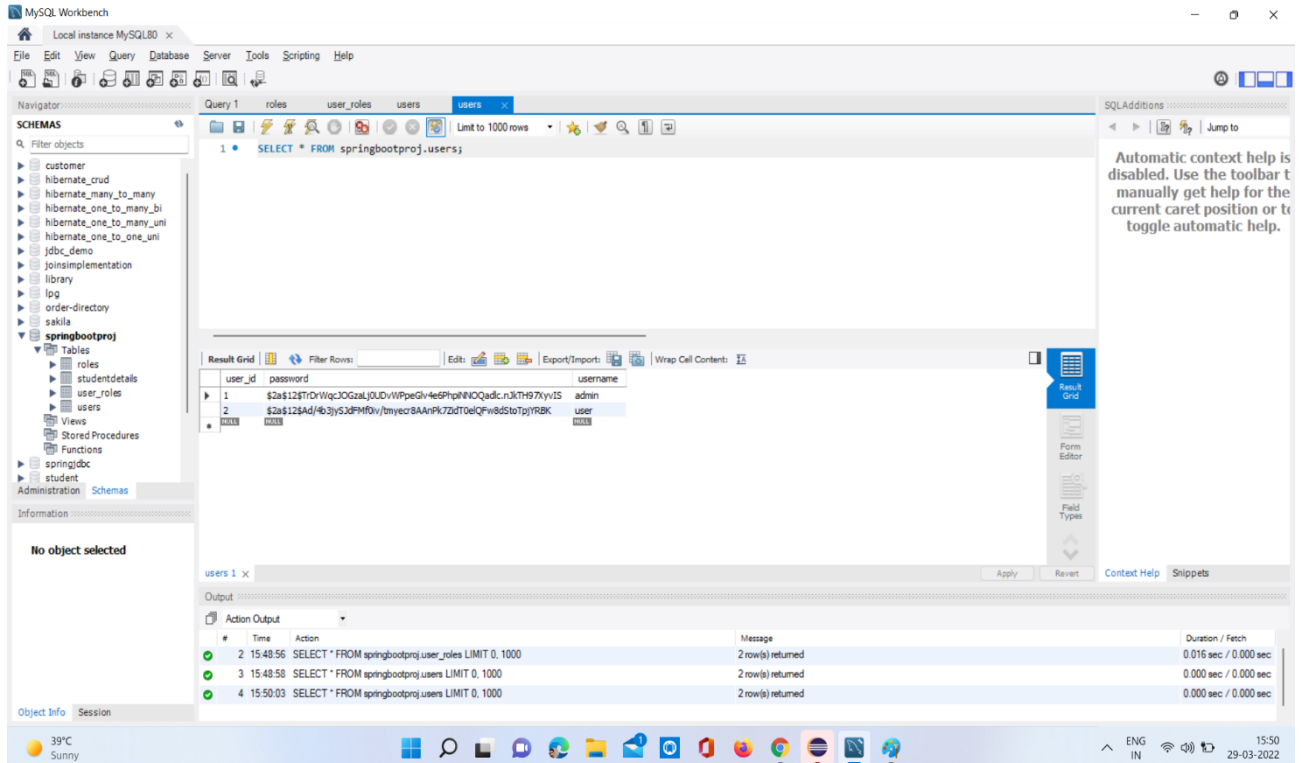


Spring Boot Security Lab 6 Solution (Snapshots)

Let's first look at the table of user, roles and user_roles junction table showing Many To Many mapping between user and roles.



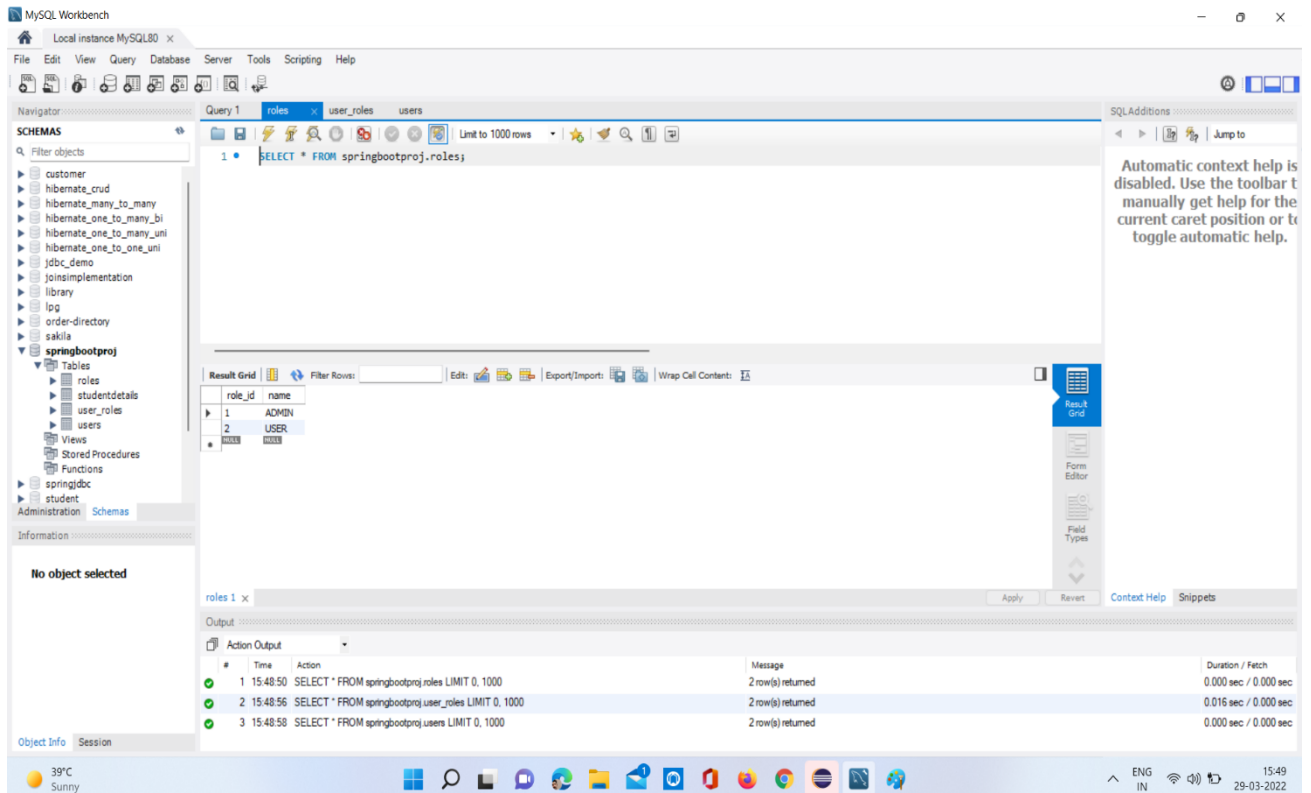
The screenshot shows the MySQL Workbench interface. The 'Navigator' pane on the left displays the 'springbootproj' schema with tables 'roles', 'user_roles', and 'users'. The 'Query 1' pane shows the SQL query: `SELECT * FROM springbootproj.users;`. The 'Result Grid' pane displays the results of the query, showing two rows of user data.

user_id	password	username
1	\$2a\$12\$TDrWq3OGzaLj0UDvWPpeGlv4ePpInNOQadC.n3KTH97Xyvi5	admin
2	\$2a\$12\$A4/4b3jyS3dPFMF0v/tmyec8AAnPk7Zd70elQFw8dSt0Tj1RBK	user

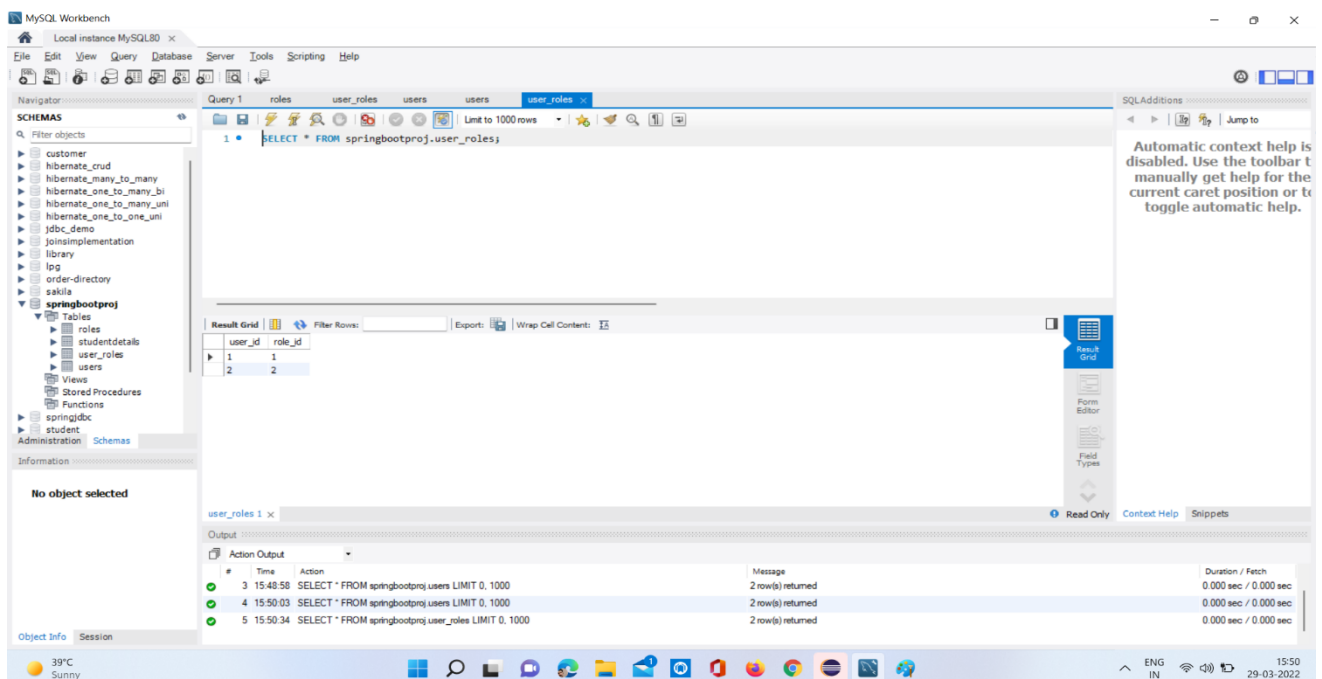
The 'Output' pane at the bottom shows the execution log with three entries, all successful:

#	Time	Action	Message	Duration / Fetch
2	15:48:56	SELECT * FROM springbootproj.user_roles LIMIT 0, 1000	2 row(s) returned	0.016 sec / 0.000 sec
3	15:48:58	SELECT * FROM springbootproj.users LIMIT 0, 1000	2 row(s) returned	0.000 sec / 0.000 sec
4	15:50:03	SELECT * FROM springbootproj.users LIMIT 0, 1000	2 row(s) returned	0.000 sec / 0.000 sec

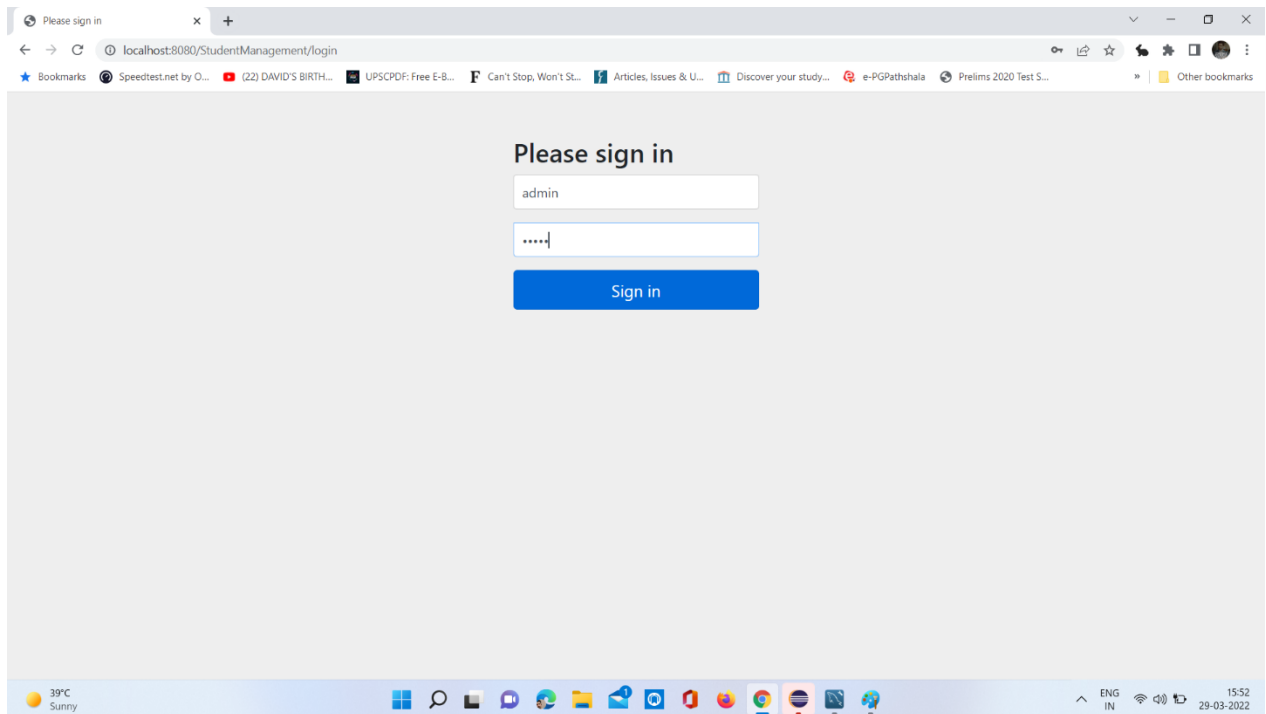
This table shows user id, B-Crypt encoded password and username in springbootproj schema.



This is the roles table consisting two roles namely ADMIN and USER with role id 1 and 2 respectively.



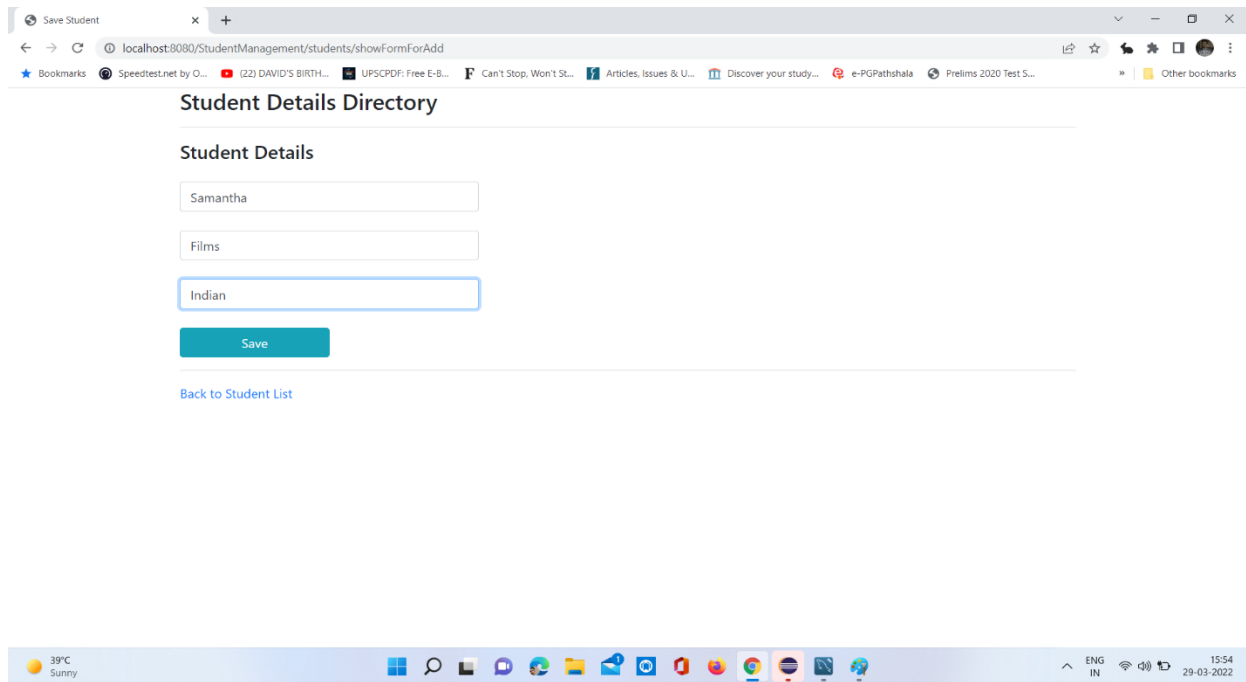
This is Many To Many mapping junction table named user_roles and it has mapping of user id to role id. User named “admin” is mapped to Role named “ADMIN” while User named “user” is mapped to Role named “USER”.



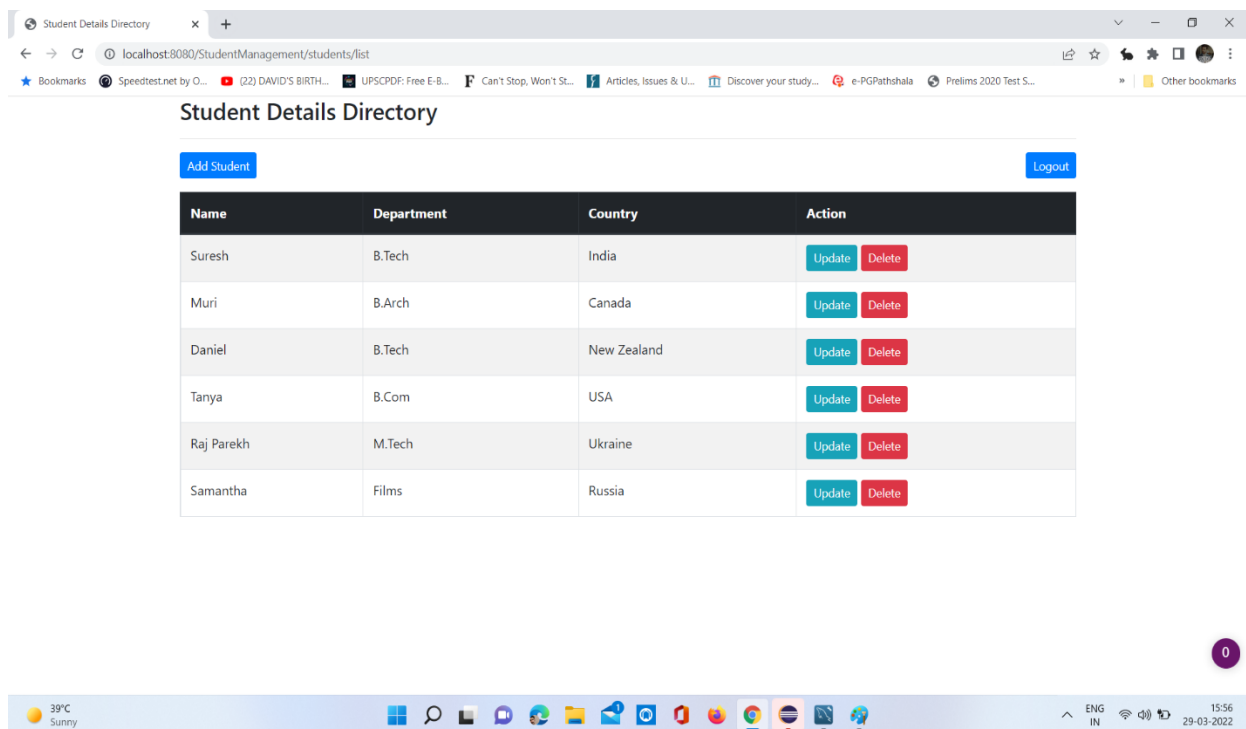
Accessing localhost:8080/StudentManagement/students/list redirects us to login page generated by Spring Security and we will login using the username “admin” and role “ADMIN”.

Name	Department	Country	Action
Suresh	B.Tech	India	Update Delete
Muri	B.Arch	Canada	Update Delete
Daniel	B.Tech	New Zealand	Update Delete
Tanya	B.Com	USA	Update Delete
Raj Parekh	M.Tech	Ukraine	Update Delete

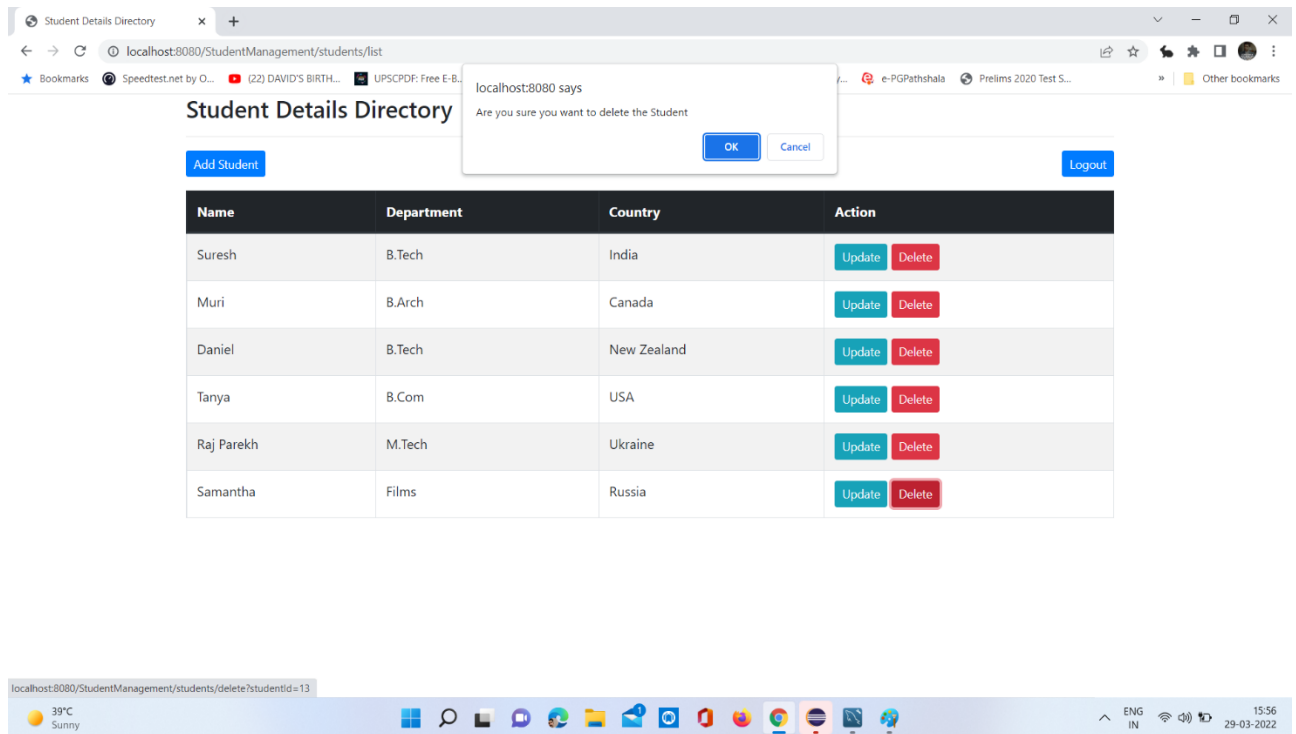
After logging we see the display page, i.e. role named ADMIN has access to the table display page of list of students.



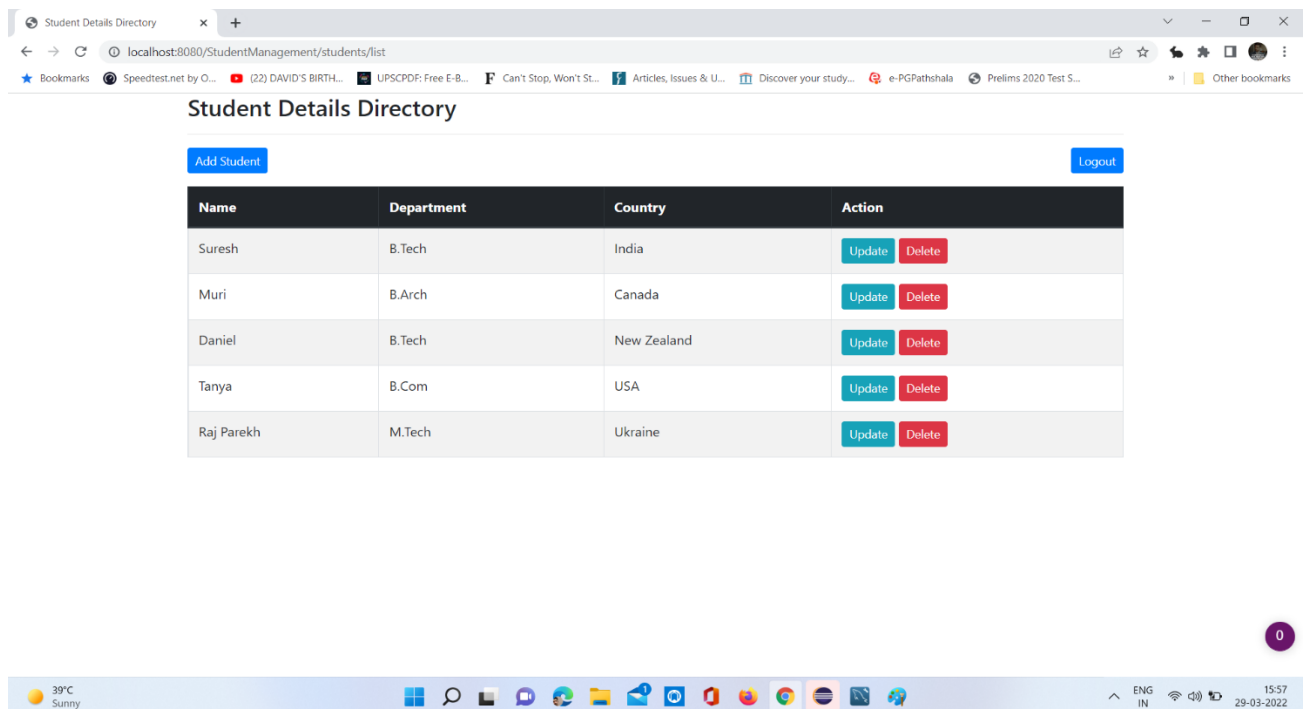
This shows that user with role of ADMIN can use : Add Student and Save the Student Details.



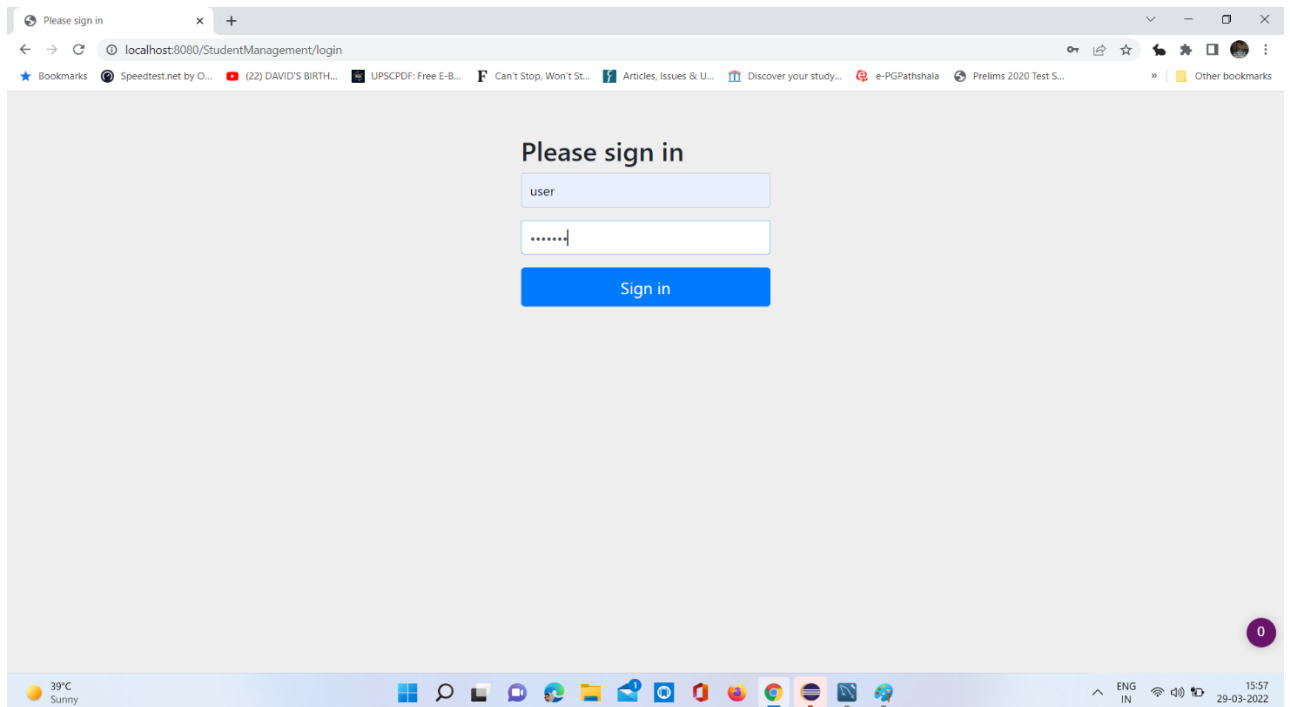
The record of Student named “Samantha” got added and her country was also changed.



The above picture displays username “admin” and role of “ADMIN” using the “Delete” Functionality.



Since the username with role of “ADMIN” can access all the functionalities, the record of Student named “Samantha” is deleted from the database.



On Clicking Logout from the username “admin” and role of “ADMIN”, we are re-directed to this login page as a part of logout success url and for accessing the list of students again we need to sign in with username and password.

This time let’s login with username “user” and role “USER”.

Student Details Directory

[Add Student](#) [Logout](#)

Name	Department	Country	Action
Suresh	B.Tech	India	Update Delete
Muri	B.Arch	Canada	Update Delete
Daniel	B.Tech	New Zealand	Update Delete
Tanya	B.Com	USA	Update Delete
Raj Parekh	M.Tech	Ukraine	Update Delete

Since user with username “user” and role of “USER” can access the list of students, we can see this table after logging in.

Save Student

localhost:8080/StudentManagement/students/showFormForAdd

Student Details Directory

Student Details

Nehal Shetty

M.Tech

Netherlands

Save

[Back to Student List](#)

39°C Sunny

ENG IN 15:58 29-03-2022

The user with username “user” and role “USER” can perform “Adding the Student” and “Saving the Student to the database”, this is displayed in the picture above.

Student Details Directory

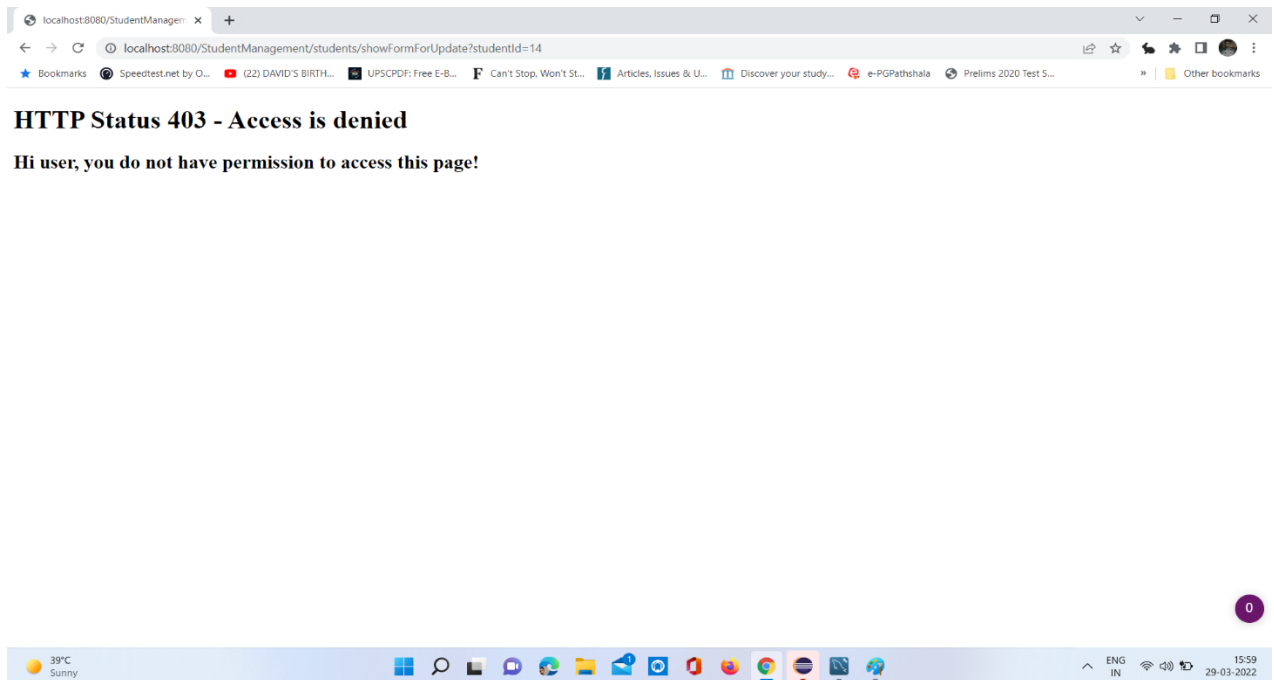
[Add Student](#) [Logout](#)

Name	Department	Country	Action
Suresh	B.Tech	India	Update Delete
Muri	B.Arch	Canada	Update Delete
Daniel	B.Tech	New Zealand	Update Delete
Tanya	B.Com	USA	Update Delete
Raj Parekh	M.Tech	Ukraine	Update Delete
Nehal Shetty	M.Tech	Netherlands	Update Delete

39°C Sunny

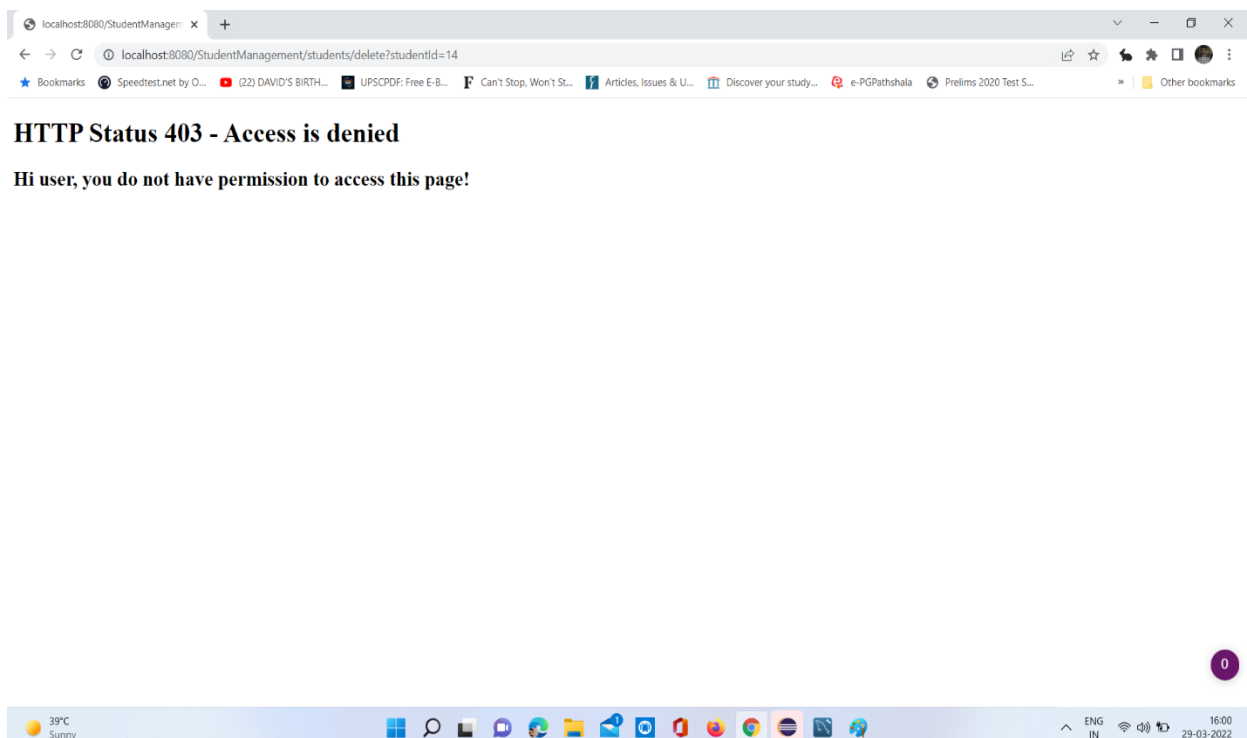
ENG IN 15:58 29-03-2022

The user with username “user” and role “USER” has successfully performed the “adding” and “saving” of a new Student Record.



As you can see in the url when we try and update the student details of any of the student, we get back a jsp page restricting the access of user with username “user” and role “USER” to perform “Updating” of records in the database.

Url: localhost:8080/StudentManagement/students/showFormForUpdate mapping provides the update function but USER role user cannot perform it.



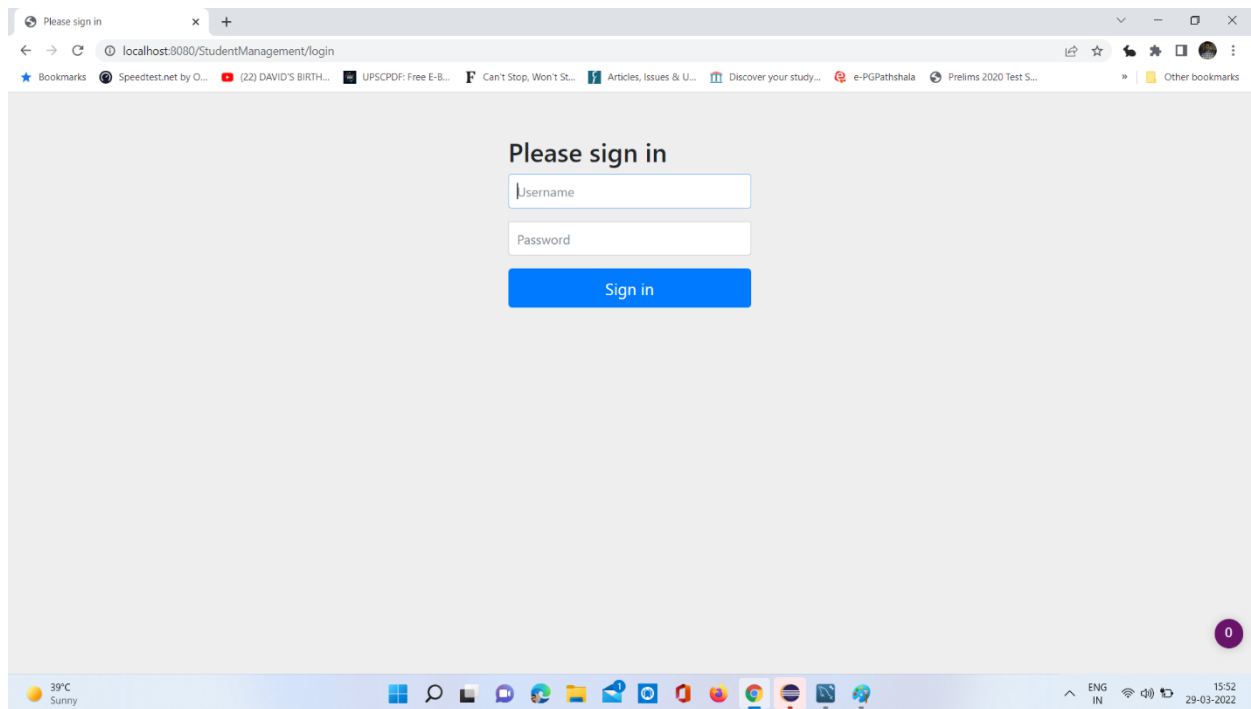
Now let’s check whether the user with username “user” and role “USER” can perform deletion, on clicking the delete button we again are redirected to a jsp page which restricts the

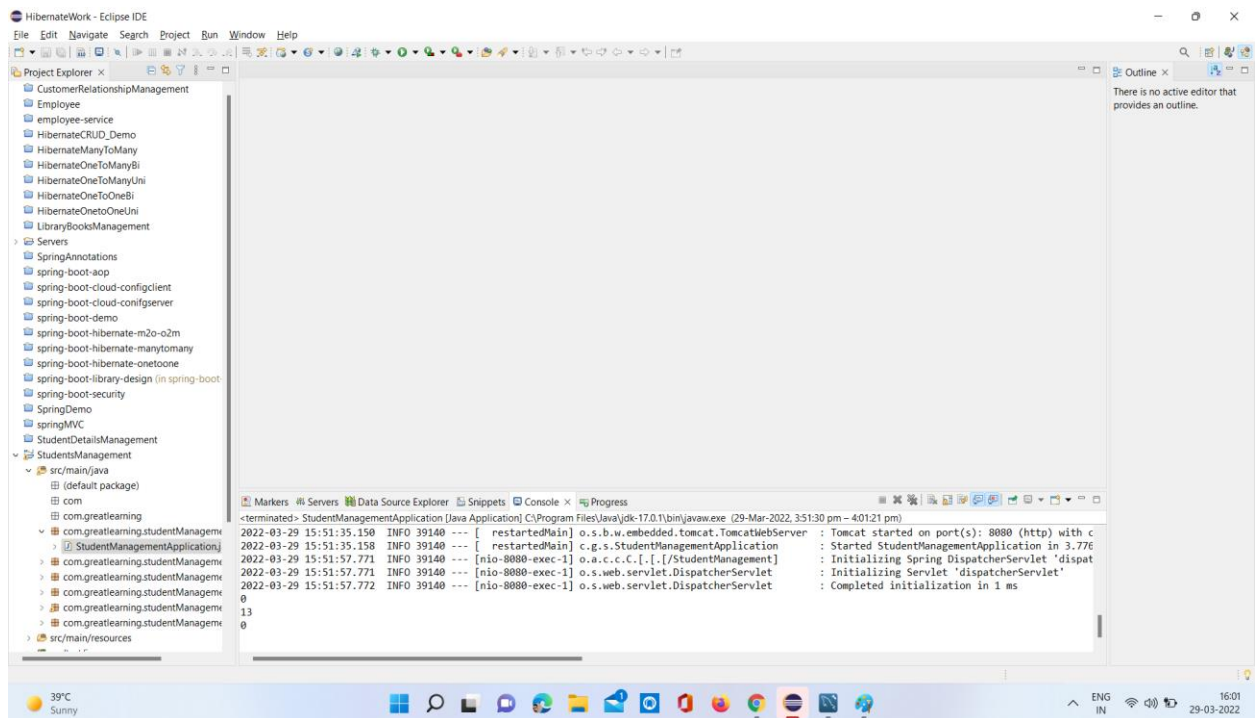
user with username “user” and role “USER” to perform deletion as only ADMIN can perform deletion.

If you look at the url: localhost:8080/StudentManagement/students/delete?studentId=14

It means we want to delete the student but the role of “USER” does not have that functionality.

Now we can logout of the user using the “Logout” button and we would be re-directed to the login page, due to Spring Security.





Now I again logged in by username “admin” and role “ADMIN” and deleted the 2 entries of students named “Raj Parekh” and “Nehal Shetty” and after logging out terminated the application.