

Employee Management Rest Api

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Above project uses Spring Rest along with Spring Boot to perform basic CRUD operations on Employee Management System.

The model **Employee** has 3 visible as well as 1 hidden attribute.

- They are ->
1. *Id* (hidden)
 2. *Firstname*
 3. *Lastname*
 4. *Email*

The application performs following functions ->

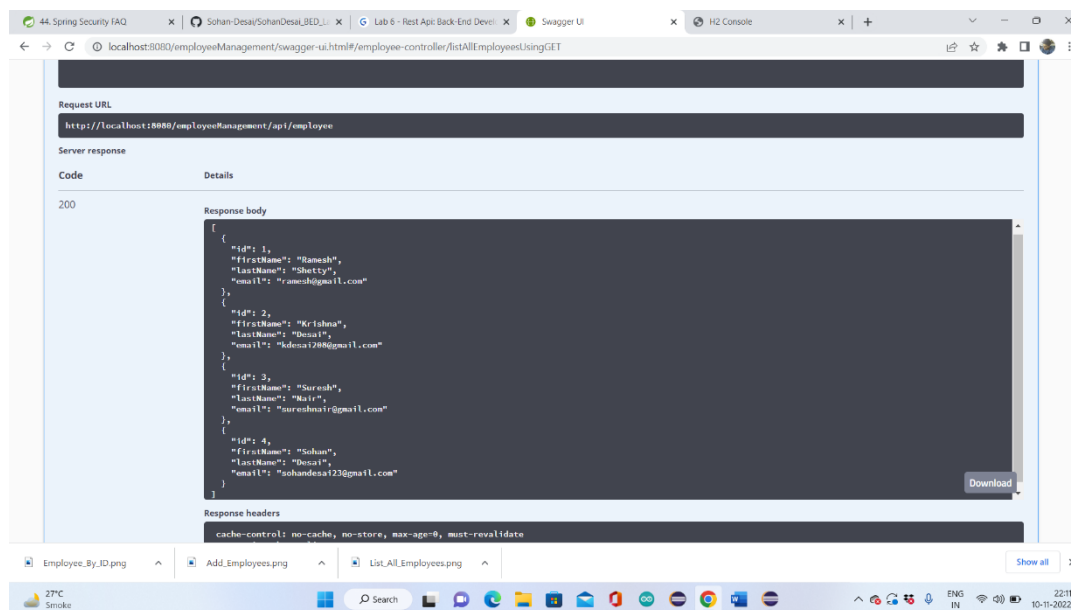
1. **Create** a new Student record
2. **Read** and display existing records
3. **Update** existing records and save any changes
4. **Delete** from existing records

The application also has security with roles -> USER and ADMIN

We shall further see each of these functionalities in greater detail

Logging in as USER

USER has password "secret". USER can access all the GET mappings.



List all employees

44. Spring Security FAQ x Sohan-Desai/SohanDesai_BED... x Lab 6 - Rest Api Back-End Deve... x Swagger UI x H2 Console

localhost:8080/employeeManagement/swagger-ui.html#/employee-controller/findEmployeeByIdUsingGET

Curl

```
curl -X GET "http://localhost:8080/employeeManagement/api/employee/2" -H "accept: */*"
```

Request URL

```
http://localhost:8080/employeeManagement/api/employee/2
```

Server response

Code	Details
200	<p>Response body</p> <pre>{ "id": 2, "firstName": "Krishna", "lastName": "Desai", "email": "hdesai20@gmail.com" }</pre> <p>Response headers</p> <pre>cache-control: no-cache, no-store, max-age=0, must-revalidate connection: keep-alive content-type: application/json date: Thu, 10 Nov 2022 16:42:32 GMT expires: 0 keep-alive: timeout=60 pragma: no-cache transfer-encoding: chunked x-content-type-options: nosniff x-frame-options: DENY x-xss-protection: 1; mode=block</pre>

Responses

Employee_By_ID.png Add_Employees.png List_All_Employees.png Show all

27°C Smoke

Find employee by id

44. Spring Security FAQ x Sohan-Desai/SohanDesai_BED... x Lab 6 - Rest Api Back-End Deve... x Swagger UI x H2 Console

localhost:8080/employeeManagement/swagger-ui.html#/employee-controller/listEmployeesByFirstNameUsingGET

GET `/api/employee/search/{firstName}` List Any Employees with Firstname

List any employees with firstname matching entered string

Parameters

Name	Description
firstName <small>required</small>	firstName
string (query)	Ramesh

Execute **Clear**

Responses Response content type: */*

Curl

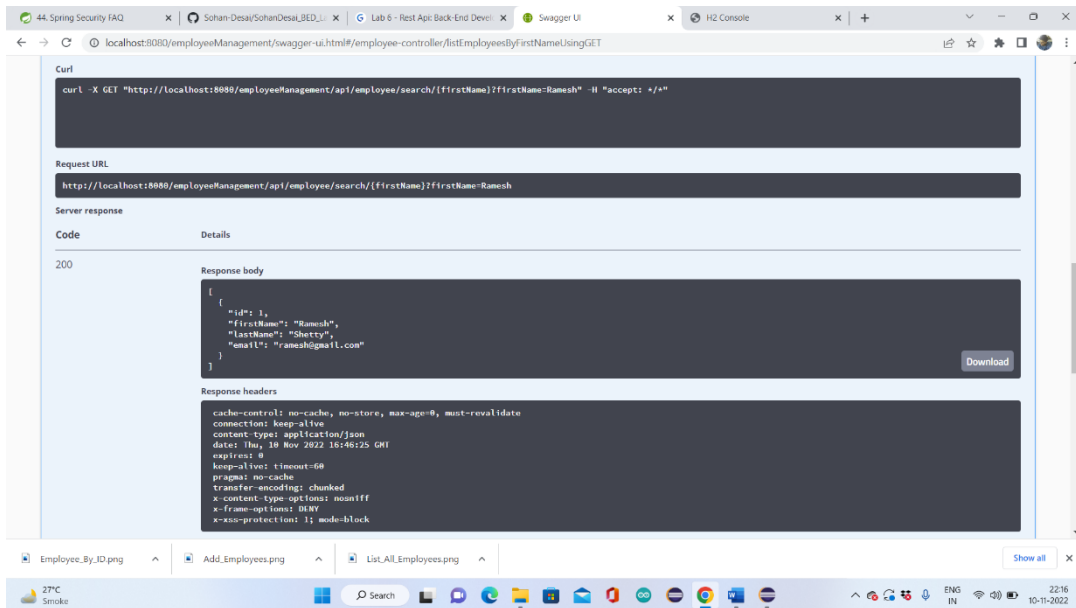
```
curl -X GET "http://localhost:8080/employeeManagement/api/employee/search/{firstName}?firstName=Ramesh" -H "accept: */*"
```

Request URL

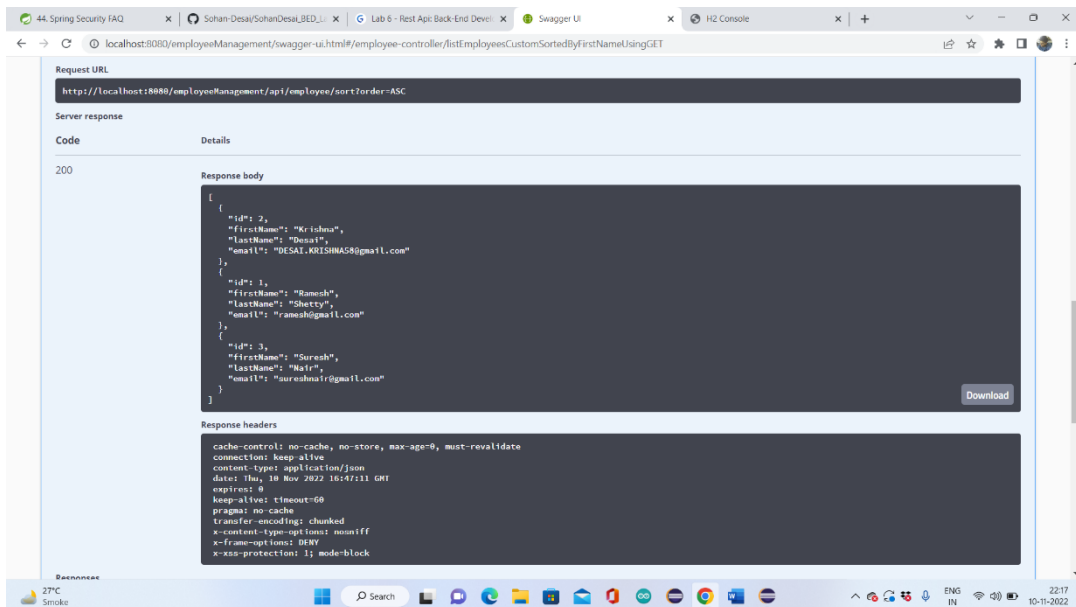
```
http://localhost:8080/employeeManagement/api/employee/search/{firstName}?firstName=Ramesh
```

Employee_By_ID.png Add_Employees.png List_All_Employees.png Show all

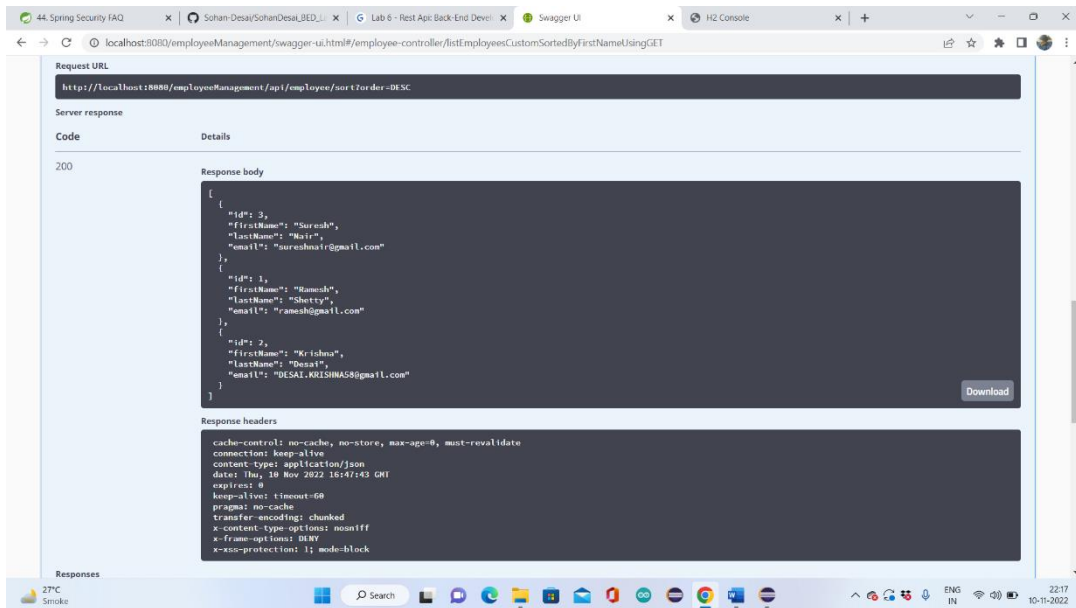
27°C Smoke



Find Employee by firstname

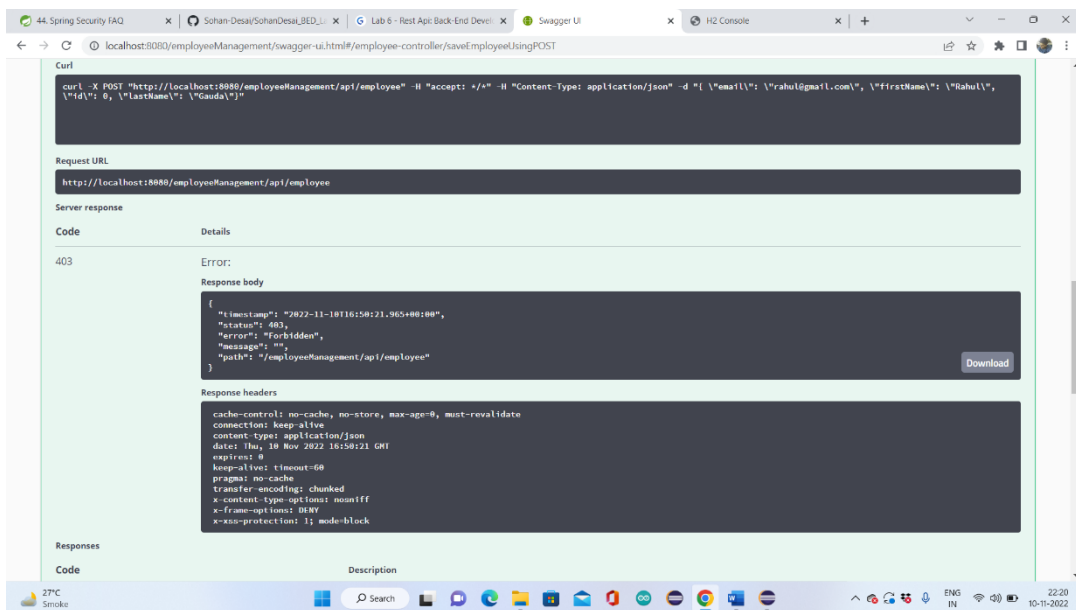


List all employees by firstname, order=ASC

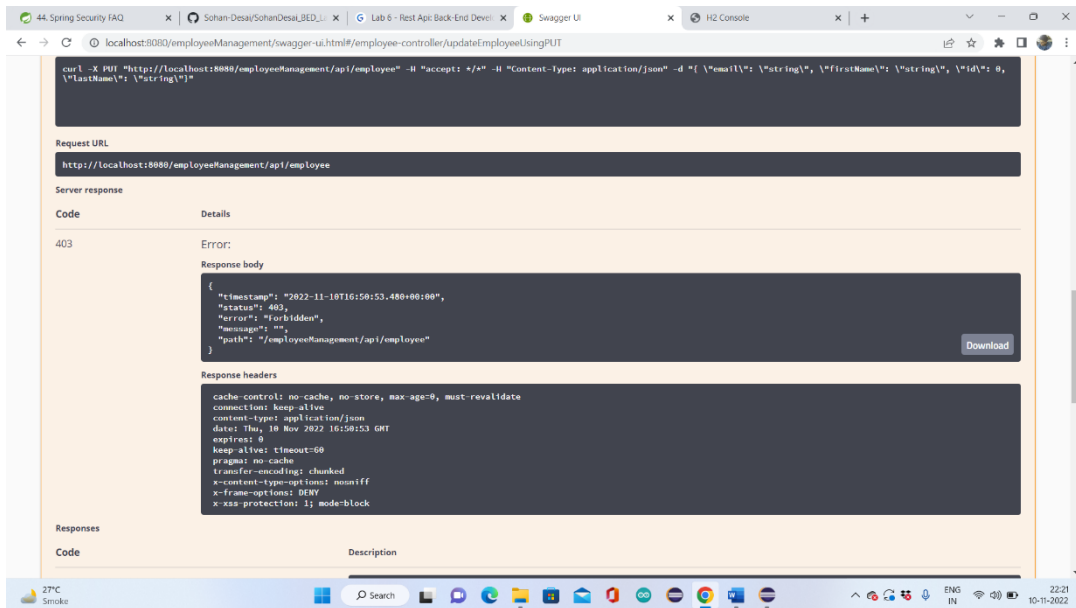


List all employees by firstname, order=DESC

However USER cannot save, update or delete employee records

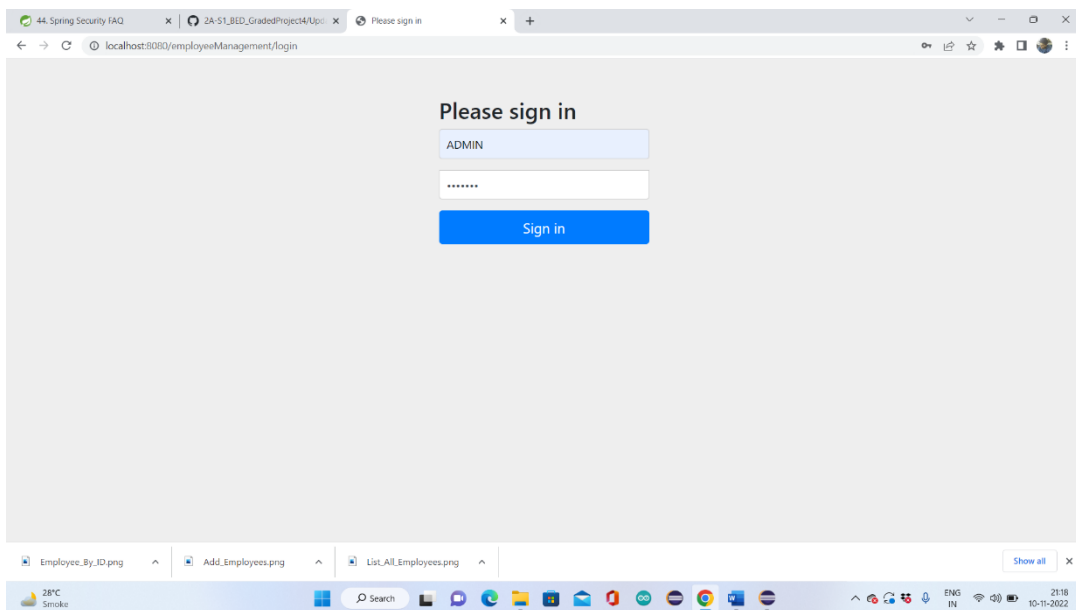


Access forbidden 403 for POST operation



Access forbidden 403 for DELETE operation

So let's logout and log back in as ADMIN



ADMIN has password "success". ADMIN can access ALL the mappings.

Request URL: `http://localhost:8080/employeeManagement/api/role`

Server response

Code	Details
200	<p>Response body</p> <pre>[{ "id": 1, "name": "ROLE_USER" }, { "id": 2, "name": "ROLE_USER" }, { "id": 3, "name": "ROLE_ADMIN" }]</pre> <p>Response headers</p> <pre>cache-control: no-cache, no-store, max-age=0, must-revalidate connection: keep-alive content-type: application/json date: Thu, 10 Nov 2022 15:03:42 GMT expires: 0 keep-alive: timeout=60 pragma: no-cache transfer-encoding: chunked x-content-type-options: nosniff x-frame-options: DENY x-xss-protection: 1; mode=block</pre>

Responses

Code	Description
200	OK

List all roles

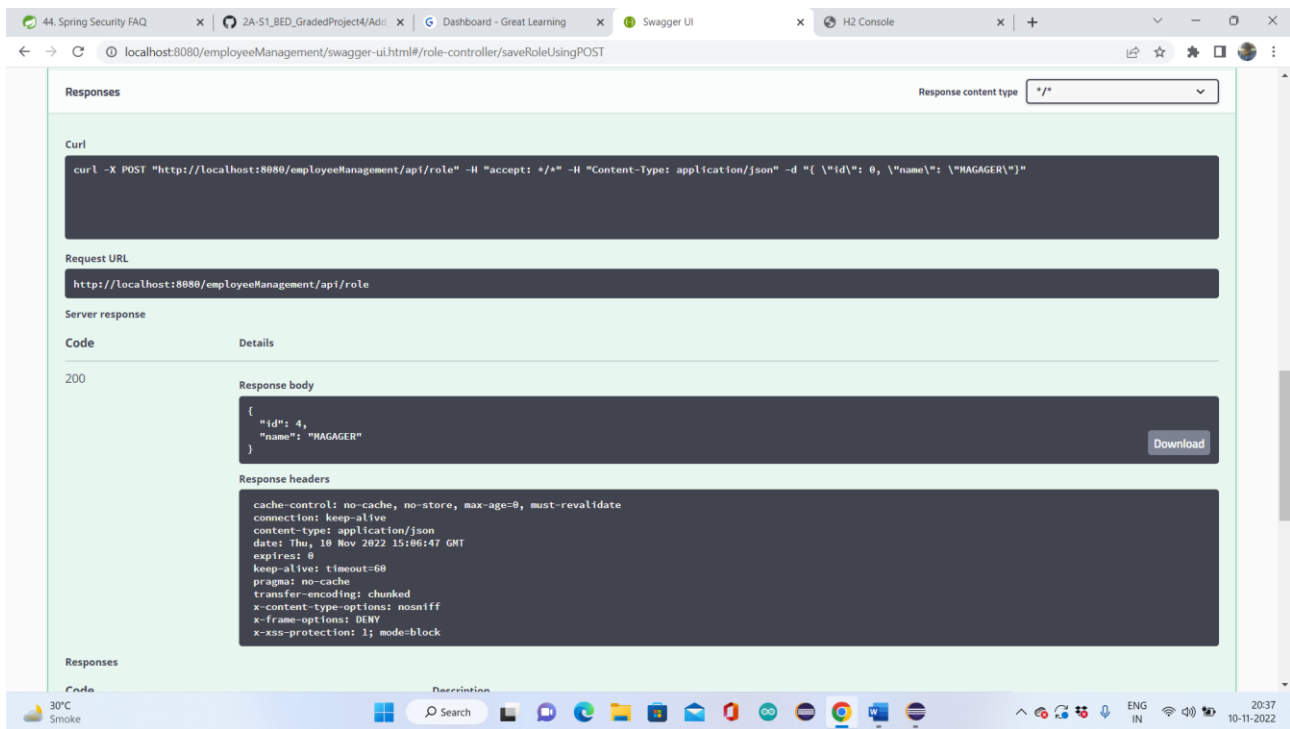
POST `/api/role` Add Single Role

This API allows you to add a single Role to the roles table

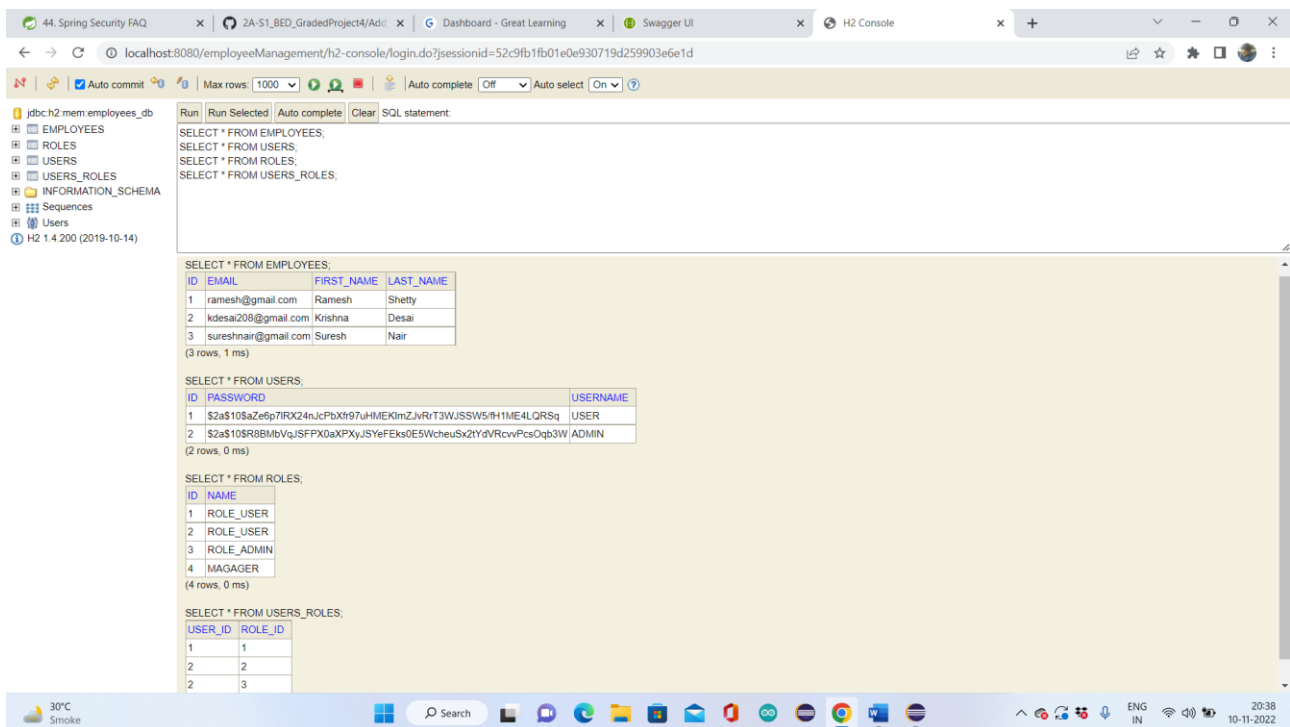
Parameters

Name	Description
role required (body)	<p>role</p> <p>Example Value</p> <pre>{ "id": 0, "name": "HAGAGER" }</pre>

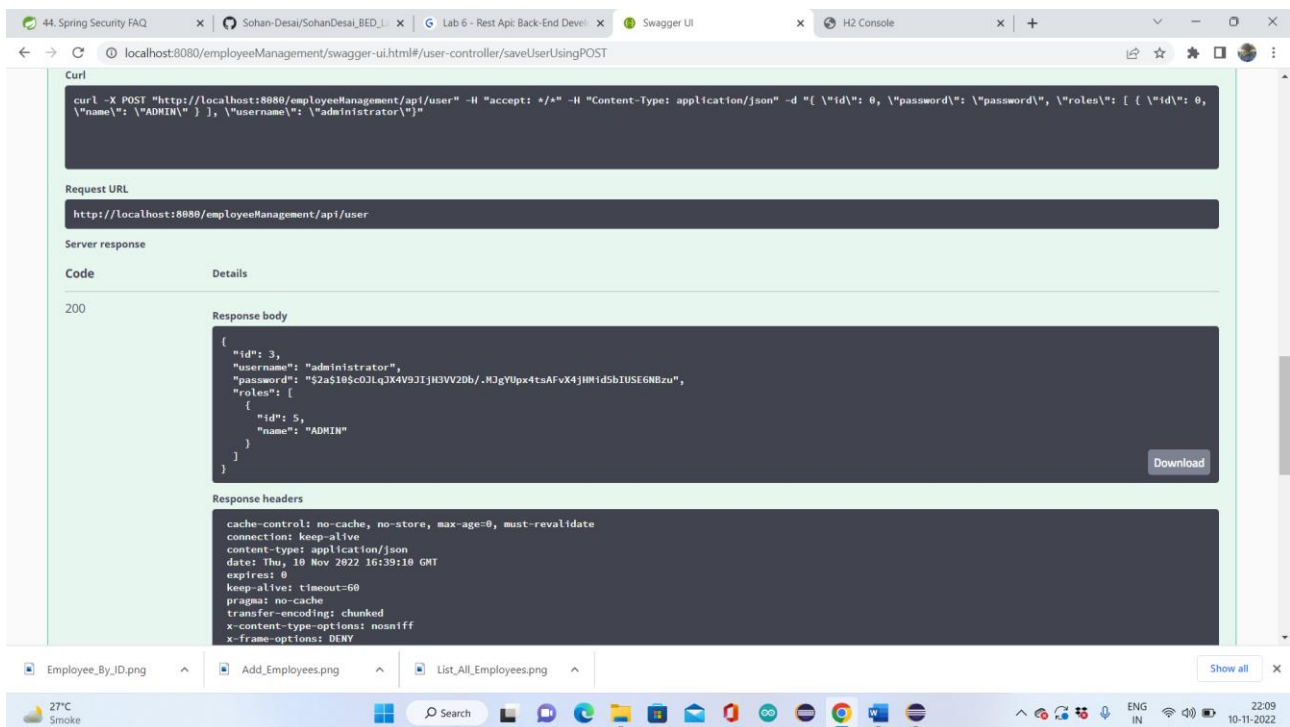
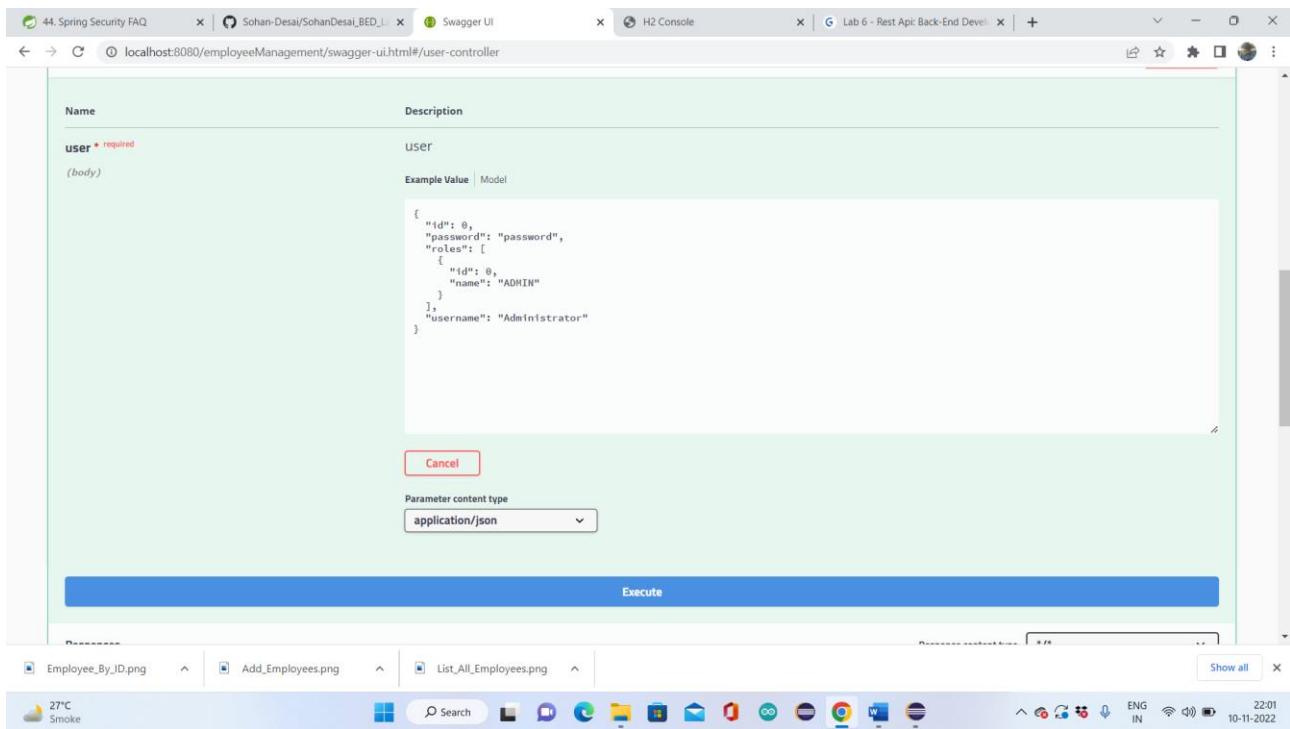
Parameter content type: `application/json`



Insert role "MANAGER"



Role MANAGER inserted successfully



Insert user “administrator” with password as “password”

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localhost:8080/employeeManagement/h2-console/login.do?jsessionid=d7298b7ceb5c838a35052701f9665c1b

Auto commit Max rows: 1000 Auto complete Off Auto select On

Run Run Selected Auto complete Clear SQL statement.

SELECT * FROM EMPLOYEES;
SELECT * FROM USERS;
SELECT * FROM ROLES;
SELECT * FROM USERS_ROLES]

3 sureshnair@gmail.com Suresh Nair
(3 rows, 0 ms)

SELECT * FROM USERS;
ID PASSWORD USERNAME
1 \$2a\$10\$Dvi5BYINI7bXcyMinTbYSemtE4yGgQGHWaKv37s/// OZgDcDrGXS USER
2 \$2a\$10\$GpKz8pSG9azg4Obhgyflm.L0rgAHWgrg2_KinDfsO3mc6bS4yFgy ADMIN
3 \$2a\$10\$CoJLqJX4V9JijH3VV2Dbr/MJgYUpx4tsAFvX4jHMid5biUSE6NBzu administrator
(3 rows, 1 ms)

SELECT * FROM ROLES;
ID NAME
1 ROLE_USER
2 ROLE_USER
3 ROLE_ADMIN
4 manager
5 ADMIN
(5 rows, 0 ms)

SELECT * FROM USERS_ROLES;
USER_ID ROLE_ID
1 1
2 2
2 3
3 5
(4 rows, 1 ms)

Employee_By_ID.png Add_Employees.png List_All_Employees.png Show all

27°C Smoke Search ENG IN 22:09 10-11-2022

User administrator inserted successfully

44. Spring Security FAQ x Sohan-Desai/SohanDesai_BED... x Lab 6 - Rest Api Back-End Deve... x Swagger UI x H2 Console

localhost:8080/employeeManagement/swagger-ui.html#/employee-controller/saveEmployeeUsingPOST

Parameters Cancel

Name Description
employee * required employee
(body)

Example Value Model

```
{
  "email": "sohandesa123@gmail.com",
  "firstName": "Sohan",
  "id": 0,
  "lastName": "Desai"
}
```

Cancel

Parameter content type
application/json

Execute

Employee_By_ID.png Add_Employees.png List_All_Employees.png Show all

27°C Smoke Search ENG IN 22:11 10-11-2022

44. Spring Security FAQ x Sohan-Desai/SohanDesai_BED... x Lab 6 - Rest Api Back-End Deve... x Swagger UI x H2 Console

localhost:8080/employeeManagement/swagger-ui.html#/employee-controller/saveEmployeeUsingPOST

```
curl -X POST "http://localhost:8080/employeeManagement/api/employee" -H "accept: */*" -H "Content-Type: application/json" -d '{"email": "sohandesai123@gmail.com", "firstName": "Sohan", "id": 0, "lastName": "Desai"}'
```

Request URL

http://localhost:8080/employeeManagement/api/employee

Server response

Code	Details
200	<p>Response body</p> <pre>{ "id": 4, "firstName": "Sohan", "lastName": "Desai", "email": "sohandesai123@gmail.com" }</pre> <p>Response headers</p> <pre>cache-control: no-cache, no-store, max-age=0, must-revalidate connection: keep-alive content-type: application/json date: Thu, 10 Nov 2022 16:41:03 GMT expires: 0 keep-alive: timeout=60 pragma: no-cache transfer-encoding: chunked x-content-type-options: nosniff x-frame-options: DENY x-xss-protection: 1; mode=block</pre>

Responses

Code	Description
Employee_By_ID.png	
Add_Employees.png	
List_All_Employees.png	

27°C Smoke

Insert Employee

44. Spring Security FAQ x Sohan-Desai/SohanDesai_BED... x Lab 6 - Rest Api Back-End Deve... x Swagger UI x H2 Console

localhost:8080/employeeManagement/h2-console/login.do?jsessionId=d7298b7ceb5c838a35052701f9665c1b

Auto commit: ☒ Max rows: 1000 Auto complete: ☐ Auto select: ☐

jdbc:h2:mem:employees_db

EMPLOYEES

ROLES

USERS

USERS_ROLES

INFORMATION_SCHEMA

Sequences

Users

H2 1.4.200 (2019-10-14)

Run | Run Selected | Auto complete | Clear | SQL statement:

```
SELECT * FROM EMPLOYEES;
SELECT * FROM USERS;
SELECT * FROM ROLES;
SELECT * FROM USERS_ROLES;
```

SELECT * FROM EMPLOYEES;

ID	EMAIL	FIRST_NAME	LAST_NAME
1	ramesh@gmail.com	Ramesh	Shetty
2	kdesai208@gmail.com	Krishna	Desai
3	sureshnair@gmail.com	Suresh	Nair
4	sohandesai23@gmail.com	Sohan	Desai

(4 rows, 1 ms)

SELECT * FROM USERS;

ID	PASSWORD	USERNAME
1	\$2a\$10\$Dvi5BYINI7bXcyMnTbYSemE4yGgQGHWaKv37s///OZgDc6rGXs	USER
2	\$2a\$10\$OpKz8pSG9azg4ObhgVfm.L0rgAHWgrg2KInDf6O3mc8bS4aYFgy	ADMIN
3	\$2a\$10\$C0JLqX4V9JlH3VW2Dbr.MJgYUp4tsAFvX4jHlId5bIU5E6NBzu	administrator

(3 rows, 0 ms)

SELECT * FROM ROLES;

ID	NAME
1	ROLE_USER
2	ROLE_USER
3	ROLE_ADMIN
4	manager
5	ADMIN

(5 rows, 0 ms)

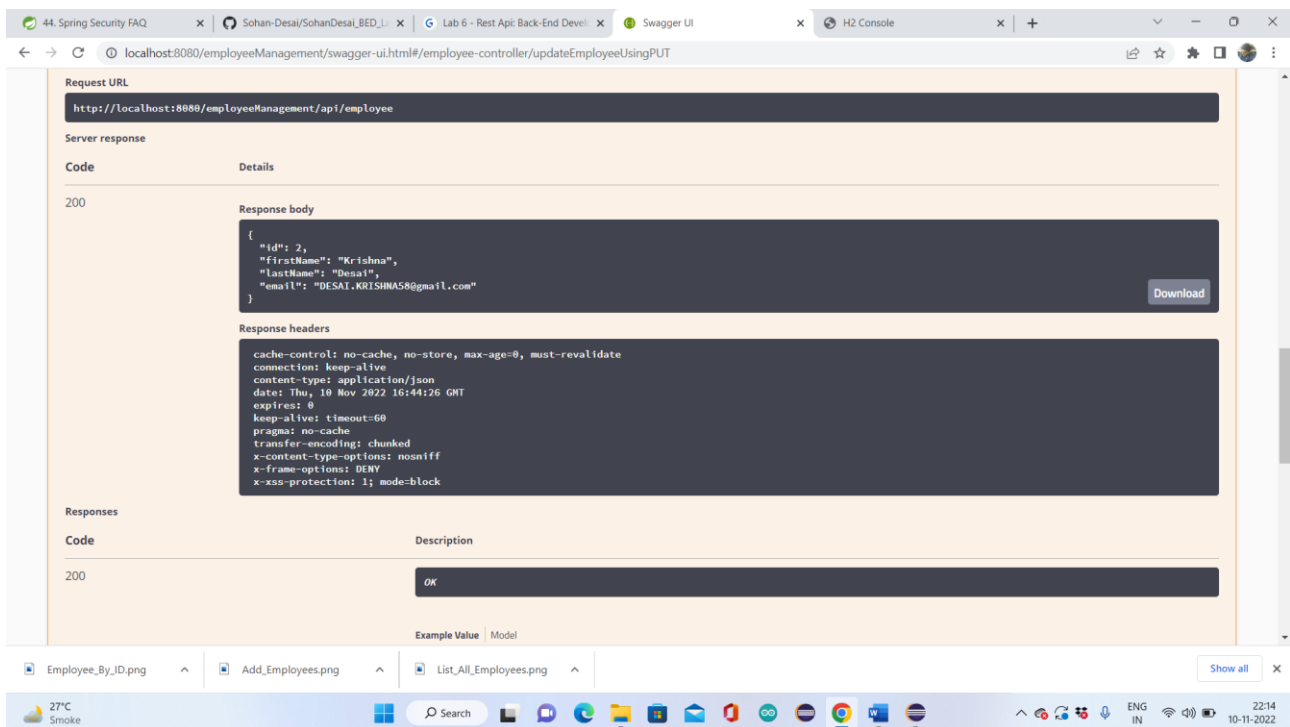
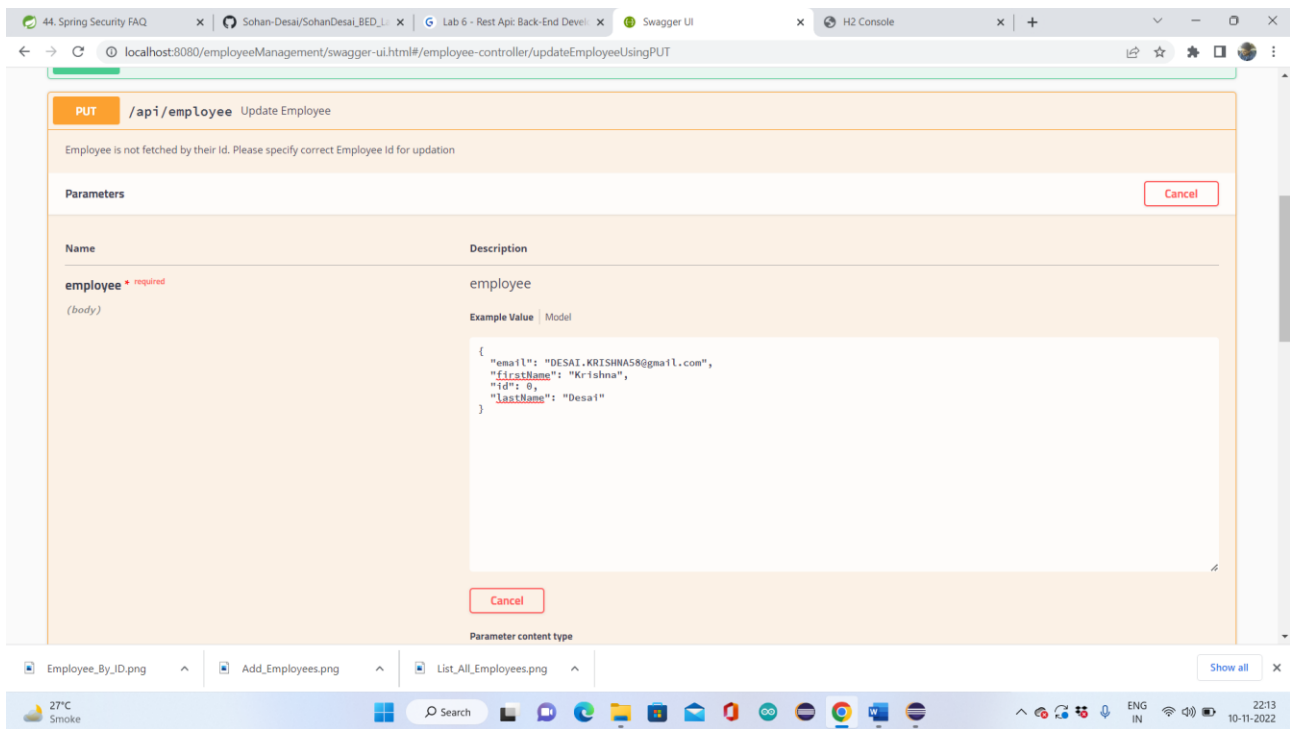
SELECT * FROM USERS_ROLES;

USER_ID	ROLE_ID
---------	---------

Employee_By_ID.png Add_Employees.png List_All_Employees.png

27°C Smoke

Employee inserted successfully



Update Employee details

#Note-> As per problem statement, records are not updated on basis of id. User needs to specify correct employee id.

44. Spring Security FAQ x Sohan-Desai/SohanDesai_BED... x Lab 6 - Rest Api Back-End Deve... x Swagger UI x H2 Console

localhost:8080/employeeManagement/h2-console/login.do?sessionId=d7298b7ceb5c838a35052701f9665c1b

Run Run Selected Auto complete Clear SQL statement.

SELECT * FROM EMPLOYEES;
SELECT * FROM USERS;
SELECT * FROM ROLES;
SELECT * FROM USERS_ROLES;

SELECT * FROM EMPLOYEES;
ID EMAIL FIRST_NAME LAST_NAME
1 ramesh@gmail.com Ramesh Shetty
2 DESAI KRISHNA58@gmail.com Krishna Desai
3 sureshnair@gmail.com Suresh Nair
4 sohandesai23@gmail.com Sohan Desai
(4 rows, 1 ms)

SELECT * FROM USERS;
ID PASSWORD USERNAME
1 \$2a\$10\$Dv5B7YINI7bXcyMnTbYSemTE4yGgQGhWakV37s/// OZgDc6rGXS USER
2 \$2a\$10\$OpK28pSG9azg4Obhgvtm.L0rgAHWjrg2.KnDfsO3mcBbS4aYFgy ADMIN
3 \$2a\$10\$C0JLqX4V9JlH3VV2Db/ MJgYUp4tsAFvX4jHMid5bIU5E6NBzu administrator
(3 rows, 0 ms)

SELECT * FROM ROLES;
ID NAME
1 ROLE_USER
2 ROLE_USER
3 ROLE_ADMIN
4 manager
5 ADMIN
(5 rows, 0 ms)

SELECT * FROM USERS_ROLES;
USER_ID ROLE_ID

Employee_By_ID.png Add_Employees.png List_All_Employees.png Show all

27°C Smoke Search ENG IN 22:14 10-11-2022

Employee details updated

44. Spring Security FAQ x Sohan-Desai/SohanDesai_BED... x Lab 6 - Rest Api Back-End Deve... x Swagger UI x H2 Console

localhost:8080/employeeManagement/swagger-ui.html#/employee-controller/deleteEmployeeByIdUsingDELETE

DELETE /api/employee/{empId} Delete Employee by Id

This API allows you to delete an Employee by their Id from the employees table

Parameters Cancel

Name Description
empId * required empId
Integer (int64) (path) 4

Execute Clear

Responses Response content type */*

Curl
curl -X DELETE "http://localhost:8080/employeeManagement/api/employee/4" -H "accept: */*"

Request URL
http://localhost:8080/employeeManagement/api/employee/4

Employee_By_ID.png Add_Employees.png List_All_Employees.png Show all

27°C Smoke Search ENG IN 22:15 10-11-2022

Delete employee by id

44. Spring Security FAQ x Sohan-Desai/SohanDesai_BED... x Lab 6 - Rest Api Back-End Deve... x Swagger UI x H2 Console

localhost:8080/employeeManagement/swagger-ui.html#/employee-controller/deleteEmployeeByIdUsingDELETE

http://localhost:8080/employeeManagement/api/employee/4

Server response

Code Details

200

Response body

Deleted employee with id : 4

Response headers

cache-control: no-cache, no-store, max-age=0, must-revalidate
connection: keep-alive
content-length: 28
content-type: text/plain; charset=UTF-8
date: Thu, 18 Nov 2022 16:45:19 GMT
expires: 0
keep-alive: timeout=60
pragma: no-cache
x-content-type-options: nosniff
x-frame-options: DENY
x-xss-protection: 1; mode=block

Responses

Code Description

200 OK

Example Value Model

"string"

Employee_By_ID.png Add_Employees.png List_All_Employees.png

27°C Smoke

22:15 10-11-2022

44. Spring Security FAQ x Sohan-Desai/SohanDesai_BED... x Lab 6 - Rest Api Back-End Deve... x Swagger UI x H2 Console

localhost:8080/employeeManagement/h2-console/login.do?sessionId=d7298b7ceb5c838a35052701f9665c1b

Auto commit Max rows: 1000 Auto complete Off Auto select On

jdbc:h2:mem:employees_db

EMPLOYEES

ROLES

USERS

USERS_ROLES

INFORMATION_SCHEMA

Sequences

Users

H2 1.4.200 (2019-10-14)

Run Run Selected Auto complete Clear SQL statement:

SELECT * FROM EMPLOYEES;
SELECT * FROM USERS;
SELECT * FROM ROLES;
SELECT * FROM USERS_ROLES;

SELECT * FROM EMPLOYEES;

ID	EMAIL	FIRST_NAME	LAST_NAME
1	ramesh@gmail.com	Ramesh	Shetty
2	DESAI KRISHNA58@gmail.com	Krishna	Desai
3	sureshnair@gmail.com	Suresh	Nair

(3 rows, 1 ms)

SELECT * FROM USERS;

ID	PASSWORD	USERNAME
1	\$2a\$10\$Dv5bYINi7bXcyMnTbYSemE4yGgQGhWakV37s///OZgDc6rGX5	USER
2	\$2a\$10\$GpKz8pSG9azg4ObhgVfm.L0rgAHWgrg2.K0ndfsO3mc8bS4aYFgy	ADMIN
3	\$2a\$10\$cOJLqJX4V9JijH3VV2Dbl.MJgYUpx4tsAFvX4jHMid5blUSE6NBzu	administrator

(3 rows, 0 ms)

SELECT * FROM ROLES;

ID	NAME
1	ROLE_USER
2	ROLE_USER
3	ROLE_ADMIN
4	manager
5	ADMIN

(5 rows, 0 ms)

SELECT * FROM USERS_ROLES;

USER_ID	ROLE_ID
1	1

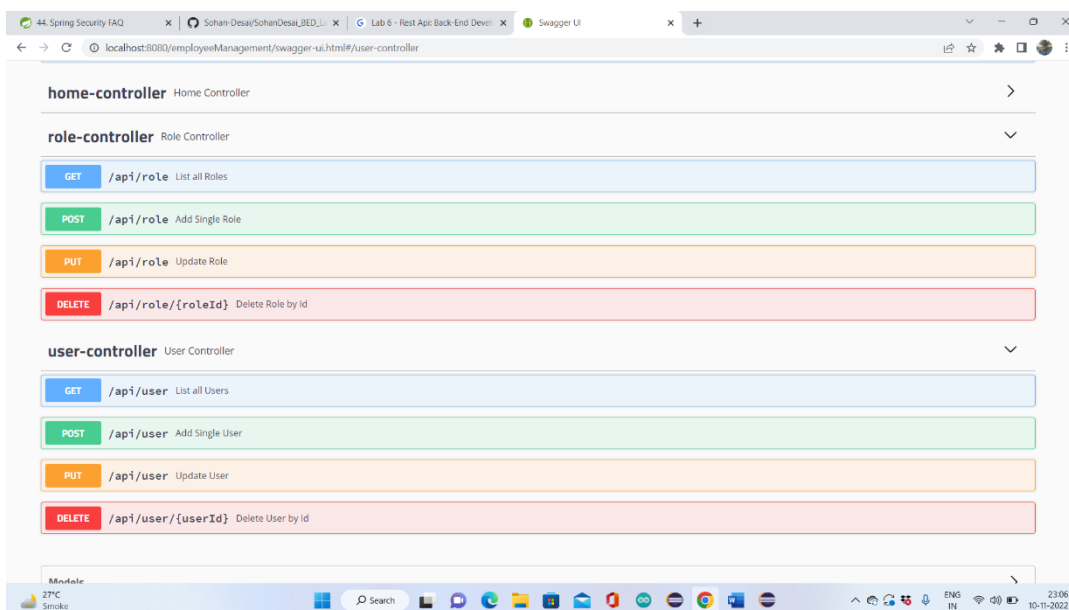
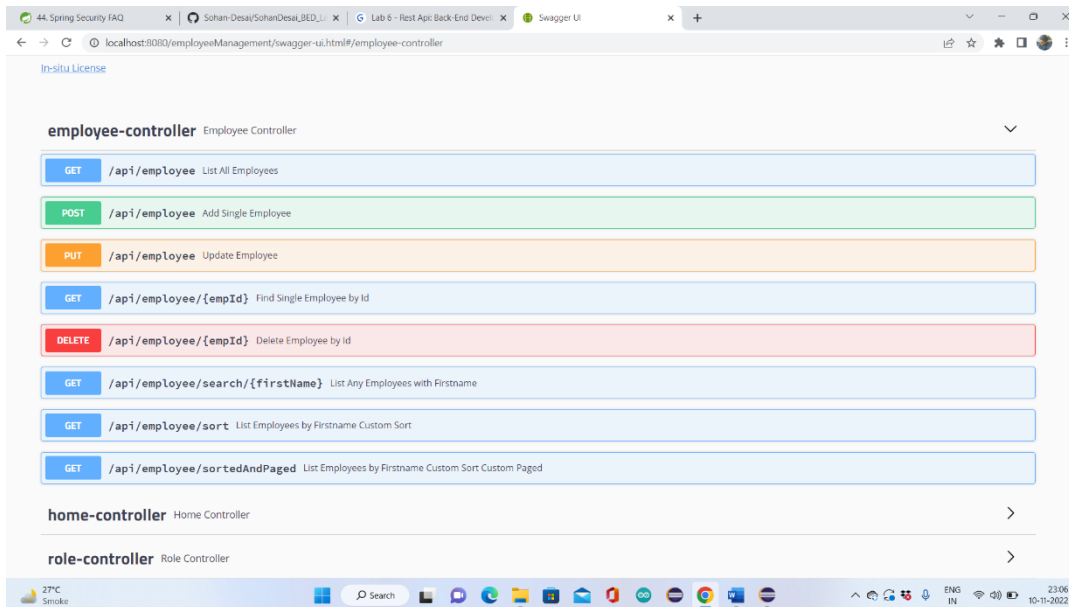
Employee_By_ID.png Add_Employees.png List_All_Employees.png

27°C Smoke

22:15 10-11-2022

Employee with id=4 deleted successfully

Finally let's see the complete list of all APIs



Thus we've successfully demonstrated all the CRUD operations with Spring Security.

Also you will find a video recording of this project on our google drive. Link to which is shared below.

<https://drive.google.com/drive/folders/1suDKkNk5ys9AtyH-Q4sYf1ELgGtxx25?usp=sharing>

Thanks again!