

Grade Assignment 4 Problem & Solution SNAP

You are required to create an Employee Management Rest API based Web application, where you will be developing CRUD (Create, Read, Update and Delete) functionality along with Sorting and some concepts of security.

Your Rest API should be secured. And should have different endpoints for different operations-

1. Read Employee List
2. Read Employee Data BY Id
3. Search Employee BY First Name
4. Sort Employee BY First Name IN ASC / DESC Order
5. Save a new Employee
6. Update an existing Employee
7. Delete an existing Employee
8. Get User Details
9. Get Role Details
10. Add a new User
11. Add a new Role

Endpoints For different Operations:

SL NO	Operation	Endpoints	Method	Accessed BY
1	Read Employee List	/api/employees	GET	USER, ADMIN
2	Read Employee Data BY Id	/api/employees/{employeeId}	GET	USER, ADMIN
3	Search Employee BY First Name	/api/employees/{employeeFirstName}	GET	USER, ADMIN
4	Sort Employee BY First Name IN ASC / DESC Order	/api/employees/sort?order=(ASC/DESC)	GET	USER, ADMIN
5	Save a new Employee	/api/employee	POST	ADMIN
6	Update an existing Employee	/api/employee	PUT	ADMIN
7	Delete an existing Employee	/api/employee/{employeeId}	DELETE	ADMIN
8	Get User Details	/api/users	GET	ADMIN
9	Get Role Details	/api/roles	GET	ADMIN
10	Add a new User	/api/add/user	POST	ADMIN
11	Add a new Role	/api/add/role	POST	ADMIN

To Access This API: Please use these below credentials for respective roles as initial run:

ADMIN: [Rakesh/admin@123]

USER: [Rajesh/user@123]

Operation & Snapshots:

1. Read Employee List

Employee Management CRM / Get All Employees

GET localhost:8080/api/employees

Authorization: Basic Authentication

Username: Rajesh

Password: user@123

Status: 200 OK Time: 4.89 s Size: 1.09 KB

```
1 {
2   "id": 1,
3   "firstName": "Rakesh",
4   "lastName": "Sahoo",
5   "email": "rks@xyz.com"
6 }
7
8 {
9   "id": 2,
10  "firstName": "Rahul",
11  "lastName": "Gupta",
12  "email": "abc@xyz.com"
13 }
14
15 {
16   "id": 3,
17   "firstName": "Sachin",
18   "lastName": "Sharma"
```

2. Read Employee Data BY Id

Employee Management CRM / GetEmployeeById

GET localhost:8080/api/employees/6

Authorization: Basic Authentication

Username: Rajesh

Password: user@123

Status: 200 OK Time: 754 ms Size: 413 B

```
1 {
2   "id": 6,
3   "firstName": "Vijay",
4   "lastName": "Das",
5   "email": "b22@xyz.com"
6 }
```

3. Search Employee BY First Name

Employee Management CRM / Search By First Name

GET localhost:8080/api/employees/search/Shyam

Send

Params Authorization Headers (8) Body Pre-request Script Tests Settings Cookies

Type Basic Au... Username Rajesh Password user@123

The authorization header will be

Body Cookies (1) Headers (11) Test Results Status: 200 OK Time: 643 ms Size: 506 B Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2   {
3     "id": 6,
4     "firstName": "Shyam",
5     "lastName": "Acharya",
6     "email": "shyam@gmail.com"
7   },
8   {
9     "id": 12,
10    "firstName": "Shyam",
11    "lastName": "Bhadhracharya",
12    "email": "shaym1@gmail.com"
13  }
14 }
```

4. Sort Employee BY First Name IN ASC / DESC Order

ASC:

Employee Management CRM / Sort Employee By First Name

GET localhost:8080/api/employees/sort?order=ASC

Send

Params Authorization Headers (8) Body Pre-request Script Tests Settings Cookies

none form-data x-www-form-urlencoded raw binary GraphQL

This request does not have a body

Body Cookies (1) Headers (11) Test Results Status: 200 OK Time: 811 ms Size: 1.09 KB Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2   {
3     "id": 8,
4     "firstName": "Alok",
5     "lastName": "Shah",
6     "email": "d44@xyz.com"
7   },
8   {
9     "id": 7,
10    "firstName": "Ashish",
11    "lastName": "Modi",
12    "email": "c33@xyz.com"
13  },
14  {
15    "id": 10,
16    "firstName": "Pappu",
17    "lastName": "Gandhi",
18    "email": "f66@xyz.com"
19  }
20 }
```

DESC:

Employee Management CRM / Sort Employee By First Name

GET localhost:8080/api/employees/sort?order=DESC Send

Params Authorization Headers (8) Body Pre-request Script Tests Settings Cookies

none form-data x-www-form-urlencoded raw binary GraphQL

This request does not have a body

Body Cookies (1) Headers (11) Test Results Status: 200 OK Time: 805 ms Size: 1.09 KB Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2   {
3     "id": 6,
4     "firstName": "Vijay",
5     "lastName": "Das",
6     "email": "b22@xyz.com"
7   },
8   {
9     "id": 5,
10    "firstName": "Varun",
11    "lastName": "Kumar",
12    "email": "a11@xyz.com"
13  },
14  {
15    "id": 3,
16    "firstName": "Sachin",
17    "lastName": "Sharma",
18    "email": "cde@xyz.com"
19  }
20 }
```

Activate Windows
Go to Settings to activate Windows.

5. Save a new Employee

Employee Management CRM / Save Employee

POST localhost:8080/api/employee Send

Params Authorization Headers (11) Body Pre-request Script Tests Settings Cookies

none form-data x-www-form-urlencoded raw binary GraphQL JSON Beautify

```
1 {
2   "firstName": "Shyam",
3   "lastName": "Bhadhrachrya",
4   "email": "shaym1@gmail.com"
5 }
```

Body Cookies (1) Headers (11) Test Results Status: 200 OK Time: 878 ms Size: 428 B Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2   "id": 12,
3   "firstName": "Shyam",
4   "lastName": "Bhadhrachrya",
5   "email": "shaym1@gmail.com"
6 }
```

6. Update an existing Employee

Employee Management CRM / Update Employee

PUT localhost:8080/api/employee **Send**

Params Authorization Headers (10) **Body** Pre-request Script Tests Settings Cookies

none form-data x-www-form-urlencoded **raw** binary GraphQL JSON Beautify

```
1 {
2   ... "id": 6,
3   ... "firstName": "Shyam",
4   ... "lastName": "Acharya",
5   ... "email": "shyam@gmail.com"
6 }
```

Body Cookies (1) Headers (11) Test Results Status: 200 OK Time: 98 ms Size: 421 B Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2   "id": 6,
3   "firstName": "Shyam",
4   "lastName": "Acharya",
5   "email": "shyam@gmail.com"
6 }
```

7. Delete an existing Employee

Employee Management CRM / Delete Employee

DELETE localhost:8080/api/employee/5 **Send**

Params **Authorization** Headers (8) Body Pre-request Script Tests Settings Cookies

Type Basic Au... Username Rakesh Password admin@123

The authorization header will be automatically generated when you send the request.

Body Cookies (1) Headers (11) Test Results Status: 200 OK Time: 749 ms Size: 370 B Save Response

Pretty Raw Preview Visualize Text

```
1 Employee Deleted - ID: 5
```

8. Get User Details

Employee Management CRM / Get Users

GET localhost:8080/api/users Send

Params Authorization Headers (8) Body Pre-request Script Tests Settings Cookies

Type Basic Au... Username Rakesh Password admin@123

The authorization header will be automatically generated when you send the request.

Body Cookies (1) Headers (11) Test Results Status: 200 OK Time: 933 ms Size: 620 B Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2   {
3     "id": 1,
4     "userName": "Rakesh",
5     "password": "$2a$12$ISGwm.2Jnm4.ip3cN0Sbf.2JvbAzrNaujI4RZhnzmY.6jy7atfGa",
6     "roles": [
7       {
8         "id": 1,
9         "name": "ADMIN"
10      }
11    ]
12  },
13  {
14    "id": 2,
15    "userName": "Rajesh".
```

Activate Windows
Go to Settings to activate Windows.

9. Get Role Details

Employee Management CRM / Get Roles

GET localhost:8080/api/roles Send

Params Authorization Headers (8) Body Pre-request Script Tests Settings Cookies

Type Basic Au... Username Rakesh Password

The authorization header will be automatically generated when you send the request.

Body Cookies (1) Headers (12) Test Results Status: 200 OK Time: 776 ms Size: 469 B Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2   {
3     "id": 1,
4     "name": "ADMIN"
5   },
6   {
7     "id": 2,
8     "name": "USER"
9   }
10 }
```

10. Add a new User

Employee Management CRM / Add User

POST localhost:8080/api/add/user

Send

Params Authorization Headers (11) Body Pre-request Script Tests Settings Cookies Beautify

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```
1 {
2   "userName": "RK",
3   "password": "654123",
4   "roles": [{
5     "id": 1,
6     "name": "ADMIN"
7   }]
8 }
```

Body Cookies (1) Headers (11) Test Results Status: 200 OK Time: 331 ms Size: 478 B Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2   "id": 3,
3   "userName": "RK",
4   "password": "$2a$10$Ss2xi9SBcyzP.LGZJafRk/u56ZUYQnyt.XM8x7TFWa/OvfUi7TEn02",
5   "roles": [
6     {
7       "id": 1,
8       "name": "ADMIN"
9     }
10  ]
}
```

Activate Windows
Go to Settings to activate Windows

11. Add a new Role

Employee Management CRM / Add Role

POST localhost:8080/api/add/role

Send

Params Authorization Headers (11) Body Pre-request Script Tests Settings Cookies Beautify

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```
1 {
2   "name": "MANAGER"
3 }
```

Body Cookies (1) Headers (11) Test Results Status: 200 OK Time: 367 ms Size: 371 B Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2   "id": 3,
3   "name": "MANAGER"
4 }
```

12. Error Snaps – For Unauthorized

Employee Management CRM / Get All Employees

GET localhost:8080/api/employees

Params Authorization Headers (7) Body Pre-request Script Tests Settings

Type No Auth

This request does not use any authorization. [Learn more](#)

Body Cookies (1) Headers (13) Test Results Status: 401 Unauthorized

Pretty Raw Preview Visualize JSON

```
1 {
2   "timestamp": "2022-07-24T13:11:30.537+00:00",
3   "status": 401,
4   "error": "Unauthorized",
5   "message": "Unauthorized",
6   "path": "/api/employees"
7 }
```

13. Error Snaps – For 403 Forbidden [i.e. a user can't access to save an employee]

Employee Management CRM / Save Employee

Save

POST localhost:8080/api/employee Send

Params Authorization Headers (11) Body Pre-request Script Tests Settings Cookies

Type Basic Auth

The authorization header will be automatically generated when you send the request. [Learn more about authorization](#)

Username Rajesh

Password user@123

☒ Show Password

Body Cookies (1) Headers (12) Test Results Status: 403 Forbidden Time: 1492 ms Size: 551 B Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2   "timestamp": "2022-07-24T13:15:54.573+00:00",
3   "status": 403,
4   "error": "Forbidden",
5   "message": "Forbidden",
6   "path": "/api/employee"
7 }
```