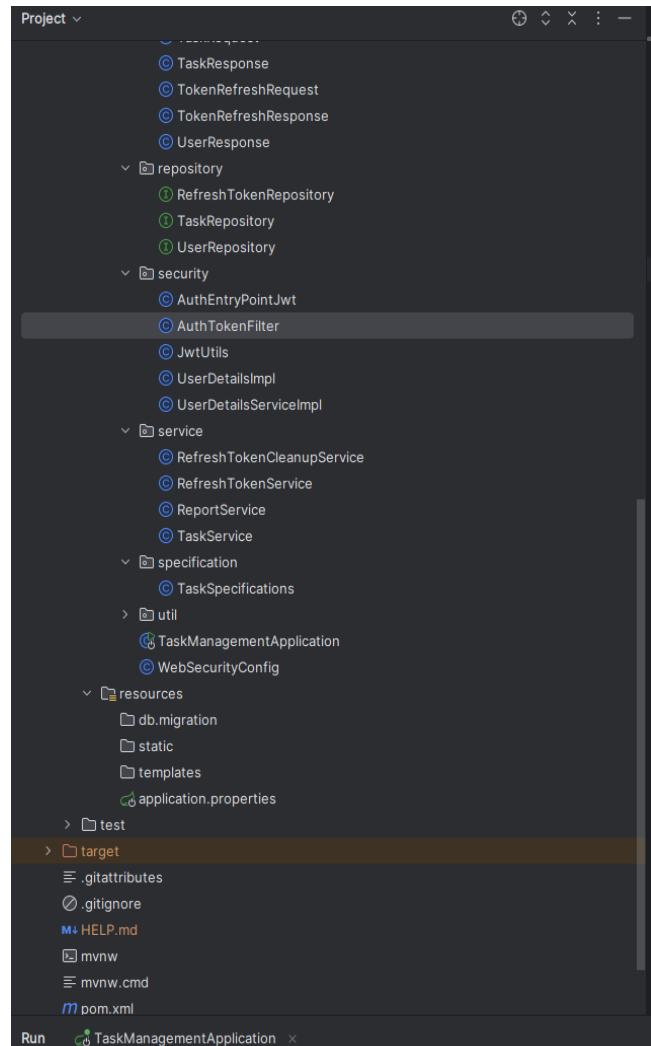
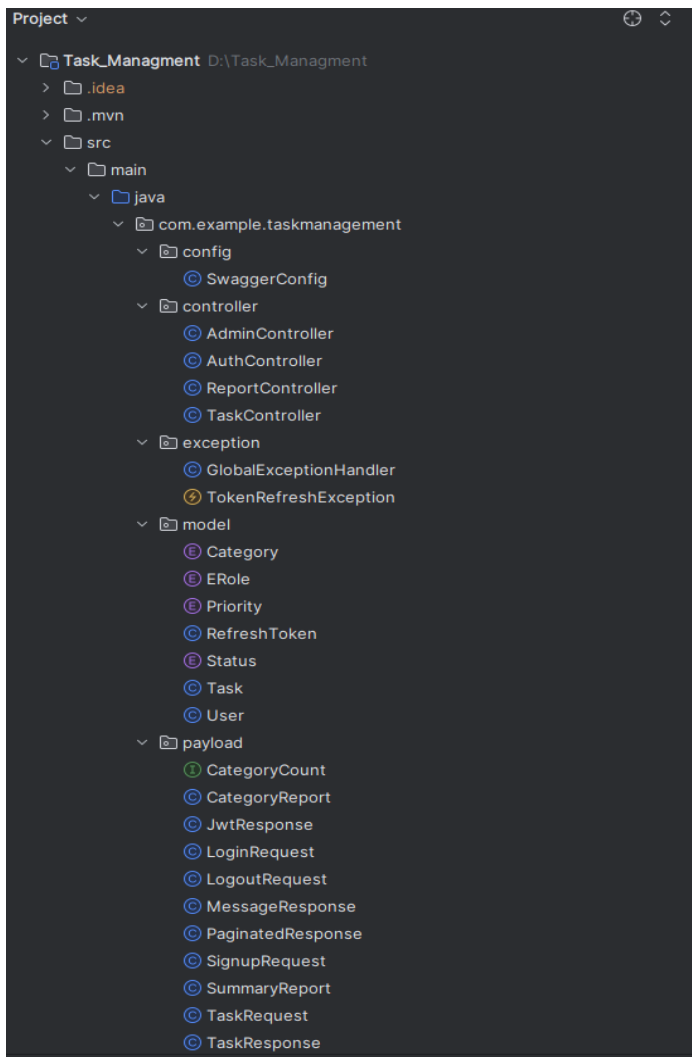


Author : Salahaldin Shehada

في هذا المشروع، قمت بتطوير نظام إدارة مهام متكامل باستخدام Spring Boot و H2 كقاعدة بيانات رئيسية لضمان سرعة التطوير وسهولة الاختبار. بدأت المشروع من خلال إعداد بيئة العمل ، بما في ذلك Spring Security و JWT لتأمين عملية تسجيل الدخول والتوثيق. صممت قاعدة البيانات بحيث تشمل جداول USERS, TASKS بشكل اساسي. نفذت جميع ميزات النظام الأساسية مثل تسجيل المستخدمين Login، إدارة المهام بعمليات CRUD، تصنيف المهام Categories، تحديد الأولويات والمواعيد النهائية priority/duedate، بالإضافة إلى وظائف البحث والتصفية وتوليد التقارير الملخصة (search and filters/ summary reports). كما دمجت Swagger لتوثيق واجهات برمجة التطبيقات بشكل واضح وسهل الاستخدام. في النهاية، تمكنت من تسليم تطبيق وظيفي يتضمن جميع الميزات المطلوبة، مع توفير documentation وقاعدة بيانات مهيأة ببيانات نموذجية لاختبار النظام بكفاءة. استخدمت H2 في بيئة التطوير لضمان سرعة الأداء وسهولة الصيانة، ومع الإعداد المناسب، يمكن الانتقال إلى قاعدة بيانات أكثر قوة مثل PostgreSQL للإنتاج مستقبلاً.

Project structure:



Author : Salahaldin Shehada

## Database schema using H2:

The screenshot displays the H2 database console interface. On the left, a tree view shows the database schema for 'jdbc:h2:mem:taskdb'. The schema includes tables: REFRESH\_TOKENS, TASKS, USERS, and USER\_ROLES. Each table lists its columns. For example, REFRESH\_TOKENS has columns ID, EXPIRY\_DATE, TOKEN, and USER\_ID. TASKS has columns ID, CATEGORY, DESCRIPTION, DUE\_DATE, PRIORITY, STATUS, and TITLE. USERS has columns ID, EMAIL, PASSWORD, and USERNAME. USER\_ROLES has columns USER\_ID and ROLE. Below the schema tree, a SQL statement is entered and executed: `INSERT INTO user_roles (user_id, role) VALUES (1, 'ROLE_ADMIN');`. The execution result shows 'Update count: 1' and '(0 ms)'. The top of the console shows the URL 'localhost:8080/h2-console/login.do?sessionId=495912401a7193d7e1f573263dc9c307' and various toolbars for navigation and execution.

Sample from postman api:

# Author : Salahaldin Shehada

ace

New Import

Tasks\_Managment\_Collection

POST Register

POST Login

POST Tasks

GET Retrieve Tasks

GET Retrieve task by id

PUT Update an Existing Task

DEL Delete Task by id

POST Login Admin

GET GetUsers

DEL Delete users

POST logout

POST Refresh token

GET Reports summary

GET Reports Categories

GET Search and Filter Tasks

Tasks\_Managment\_Collection / Register

POST http://localhost:8080/api/auth/register

Params Authorization Headers (10) Body Scripts Settings

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

```
1 {
2   "username": "testuser1",
3   "email": "testuser@example.com",
4   "password": "Password123!"
5 }
6
```

Body Cookies Headers (14) Test Results

Pretty Raw Preview Visualize JSON

```
1 {
2   "message": "User registered successfully!"
3 }
```

Tasks\_Managment\_Collection / Login

POST http://localhost:8080/api/auth/login

Params Authorization Headers (10) Body Scripts Settings

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

```
1 {
2   "username": "testuser1",
3   "password": "Password123!"
4 }
5
```

Body Cookies Headers (14) Test Results

Pretty Raw Preview Visualize JSON

```
1 {
2   "token": "eyJhbGciOiJIUzUxMi19.eyJzdWIiOiJ0ZXN0dXNlcjE1LCJpYXQiOiJlMzQ0OTAzMzgsIiwiaWF0IjE6MTc0NjczNjczOH0.",
3   "refreshToken": "9ed5eb8e-75f2-4836-9e11-68ba4f1fd411",
4   "type": null,
5   "id": 1,
6   "username": "testuser1",
7   "email": "testuser@example.com"
8 }
```

Author : Salahaldin Shehada

### Creating task using user token :

+

Tasks\_Managment\_Collection

POST Register

POST Login

POST Tasks

GET Retrieve Tasks

GET Retrieve task by id

PUT Update an Existing Task

DEL Delete Task by id

POST Login Admin

GET GetUsers

DEL Delete users

POST logout

POST Refresh token

GET Reports summary

GET Reports Categories

GET Search and Filter Tasks

Tasks\_Managment\_Collection / Tasks

POST

http://localhost:8080/api/tasks

Params

Authorization

Headers (11)

Body

Scripts

Settings

Headers

9 hidden

	Key	Value	Description
<input checked="" type="checkbox"/>	Content-Type	application/json	
<input checked="" type="checkbox"/>	Authorization	Bearer eyJhbGciOiJIUzUxMiJ9.eyJzdWIiOiJ0ZXN0dXNlcjEILCJpYXQiOiE3MzQ...	
	Key	Value	Description

Body

Cookies

Headers (14)

Test Results

🔍

Pretty

Raw

Preview

Visualize

JSON

🔍

```

1  {
2    "id": 1,
3    "title": "Read Spring Documentation",
4    "description": "Thoroughly read and understand the latest Spring Framework documentation.",
5    "status": "COMPLETED",
6    "priority": "LOW",
7    "category": "LEARNING",
8    "dueDate": "2024-12-22"
9  }

```

## Creating task using swagger endpoints :

[localhost:8080/swagger-ui/index.html#/Task%20Controller/createTask](#)

[YouTube](#)
[Maps](#)
[Google Translate](#)
[Login - soliya](#)

Request body required

application/json

```
{
  "title": "Some task",
  "description": "some stuff",
  "status": "PENDING",
  "priority": "HIGH",
  "category": "HOME",
  "deadline": "2024-12-24"
}
```

Execute

Clear

Responses

curl -X POST \

http://localhost:8080/api/tasks/ \

-H 'Content-Type: application/json' \

-d '{

"title": "Some task",

"description": "some stuff",

"status": "PENDING",

"priority": "HIGH",

"category": "HOME",

"deadline": "2024-12-24"

}'

Request URL

http://localhost:8080/api/tasks

Server response

Code

Details

200

Response body

```
{
  "id": 1,
  "title": "Some task",
  "description": "some stuff",
  "status": "PENDING",
  "priority": "HIGH",
  "category": "HOME",
  "deadline": "2024-12-24"
}
```

Download

Response headers

```
cache-control: no-cache, no-store, max-age=0, must-revalidate
connection: keep-alive
content-type: application/json
date: Sat, 12 Dec 2024 18:05:45 GMT
expires: 0
keep-alive: 100ms
pragma: no-cache
transfer-encoding: chunked
vary: Origin,Access-Control-Request-Method,Access-Control-Request-Headers
x-content-type-options: nosniff
x-frame-options: SAMEORIGIN
x-xss-protection: 0
```

Responses

Code

Description

Links

Author : Salahaldin Shehada

## Retrieve tasks :

Tasks\_Managment\_Collection / Retrieve Tasks

GET http://localhost:8080/api/tasks

Params Authorization Headers (8) Body Scripts Settings

Body Cookies Headers (14) Test Results 200 OK

Pretty Raw Preview Visualize JSON

```
15      "description": "Thoroughly read and understand the latest Spring Framework documentation.",
16      "status": "COMPLETED",
17      "priority": "LOW",
18      "category": "LEARNING",
19      "dueDate": "2024-12-22"
20    },
21    {
22      "id": 3,
23      "title": "R3",
24      "description": "Thoroughly read and understand the latest Spring Framework documentation.",
25      "status": "COMPLETED",
26      "priority": "HIGH",
27      "category": "LEARNING",
28      "dueDate": "2024-12-22"
29    },
30    {
31      "id": 4,
32      "title": "R4",
33      "description": "Thoroughly read and understand the latest Spring Framework documentation.",
34      "status": "COMPLETED",
35      "priority": "HIGH",
36      "category": "LEARNING",
37      "dueDate": "2024-12-22"
38    },
39    {
40      "id": 5,
41      "title": "Read Spring Documentation",
42      "description": "Thoroughly read and understand the latest Spring Framework documentation.",
43      "status": "COMPLETED",
44      "priority": "LOW",
45      "category": "LEARNING",
46      "dueDate": "2024-12-22"
47    }
48  ],
49  "currentPage": 0,
50  "pageSize": 10,
51  "totalElements": 5,
52  "totalPages": 1
53 }
```

Using search filter "low" and sort by date:



Author : Salahaldin Shehada

Update existing task :

Tasks\_Management\_Collection

POST Register

POST Login

POST Tasks

GET Retrieve Tasks

GET Retrieve task by id

PUT Update an Existing Task

DEL Delete Task by id

POST Login Admin

GET GetUsers

DEL Delete users

POST logout

POST Refresh token

GET Reports summary

GET Reports Categories

GET Search and Filter Tasks

PUT

▼

http://localhost:8080/api/tasks/3

Params

Authorization

Headers (11)

Body ●

Scripts

Settings

Headers

👁 9 hidden

	Key	Value
<input checked="" type="checkbox"/>	Content-Type	application/json
<input checked="" type="checkbox"/>	Authorization	Bearer eyJhbGciOiJIUzUxMiJ9.eyJzdWIiOiI
	Key	Value

Body

Cookies

Headers (14)

Test Results

🔄

Pretty

Raw

Preview

Visualize

JSON ▼

≡

```

1  {
2    "id": 3,
3    "title": "Read Spring Documentation",
4    "description": "Thoroughly read and understand the latest Spring Framework documentation.",
5    "status": "COMPLETED",
6    "priority": "LOW",
7    "category": "LEARNING",
8    "dueDate": "2024-12-21"
9  }

```

Author : Salahaldin Shehada

Reports summary:

GET

/api/reports/summary

Generate Summary Report

Provides a summary of total, completed, and pending tasks.

Parameters

Cancel

No parameters

Execute

Clear

Responses

Curl

curl -X 'GET' \n'http://localhost:8080/api/reports/summary' \n-H 'accept: \*/\*' \n-H 'Authorization: Bearer ey3hbGciOiJIUzIuNiI9.eyJzdWIiOiI0ZDZlODUwMTc3EjE1CjpwYXQ0OTAzPzRzgsTmV4cCI6MTczNDk3Njc3QmQ6Gmh8SjhsIS40K7E3nZj4y9bhh1\_nD9558U5yE83b5vAyFD61KDhmBuZyur2o6VQp2Aa9AAPmcPq\_U1Hsjt-mg'

Request URL

http://localhost:8080/api/reports/summary

Server response

Code

Details

200

Response body

{\n \"totalTasks\": 4,\n \"completedTasks\": 3,\n \"pendingTasks\": 1\n}

Download

Response headers

cache-control: no-cache,no-store,max-age=0,must-revalidate\nconnection: keep-alive\ncontent-type: application/json\ndate: Sun,22 Dec 2024 18:13:37 GMT\nexpires: 0\nkeep-alive: timeout=60\npragma: no-cache\ntransfer-encoding: chunked\nvary: Origin,Access-Control-Request-Method,Access-Control-Request-Headers\nx-content-type-options: nosniff\nx-frame-options: SAMEORIGIN\nx-ssr-protection: 0

Responses

Code

Description

Links

200

OK

No links

Media type

\*/\*



Author : Salahaldin Shehada

## Reports categories :

GET /api/reports/summary Generate Summary Report

GET /api/reports/categories Generate Category Report

Provides a count of tasks grouped by category.

Parameters

No parameters

Execute

Clear

Responses

Curl

curl -X 'GET' \n'http://localhost:8080/api/reports/categories' \n-H 'accept: \*/\*' \n-H 'Authorization: Bearer eyJhbGciOiJIUzI1NiIsInR5cCI6IkpzZW50L3N1bWU6IjE1CjpwYXQ1OjE3MzQ0OTAzRzgsIiw4cCI6MTczNDk3NjczOj06Lmhh5jhsT5d07E3nZj4y9bhh1\_n09558U5yE83b5v4yF06IXDhmbu2yur2o6VQp2Aa9AAPncPq\_U3H5jt-ag'

Request URL

http://localhost:8080/api/reports/categories

Server response

Code

Details

200

Response body

{\n "tasksByCategory": {\n "LEARNING": 3,\n "WORK": 1\n }\n}

Response headers

cache-control: no-cache,no-store,max-age=0,must-revalidate\nconnection: keep-alive\ncontent-type: application/json\ndate: Sun, 22 Dec 2024 18:14:13 GMT\nexpires: 0\nkeep-alive: timeout=60\npragma: no-cache\ntransfer-encoding: chunked\nvary: Origin,Access-Control-Request-Method,Access-Control-Request-Headers\nx-content-type-options: nosniff\nx-frame-options: SAMEORIGIN\nx-xss-protection: 0

Responses

Code

Description

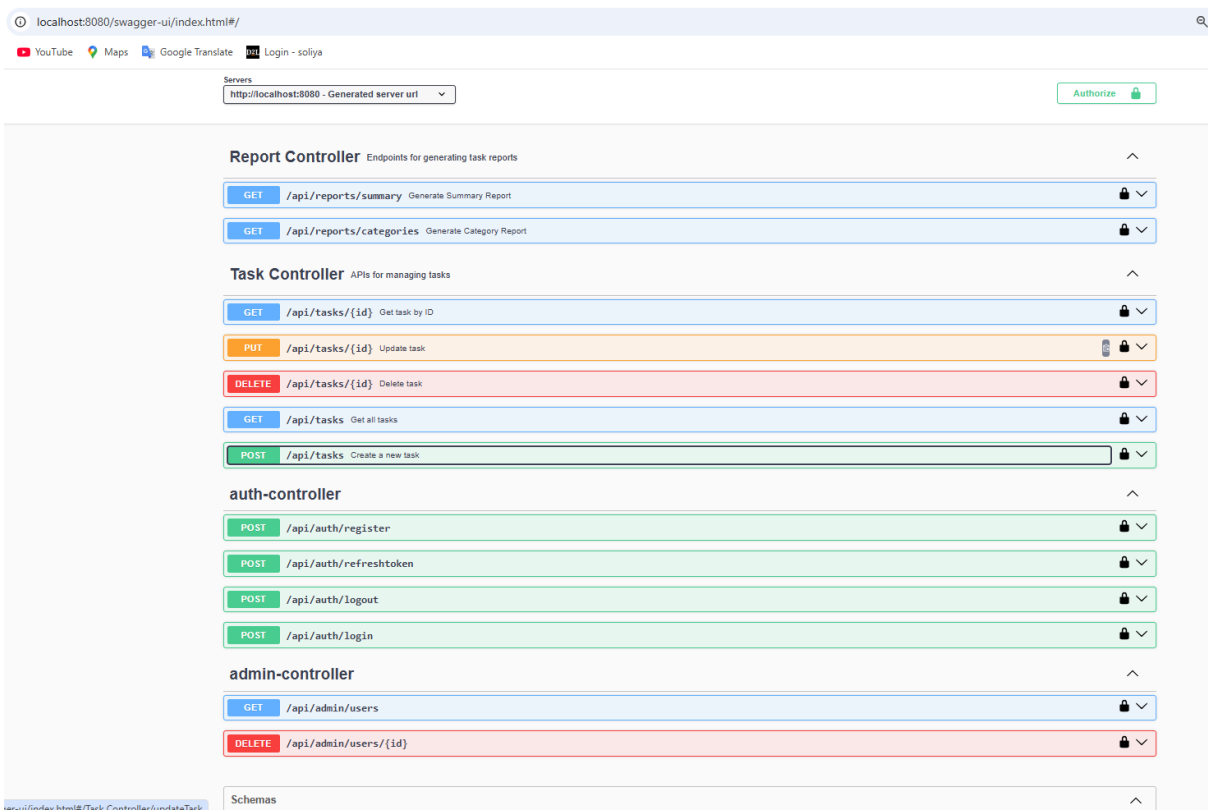
200

OK

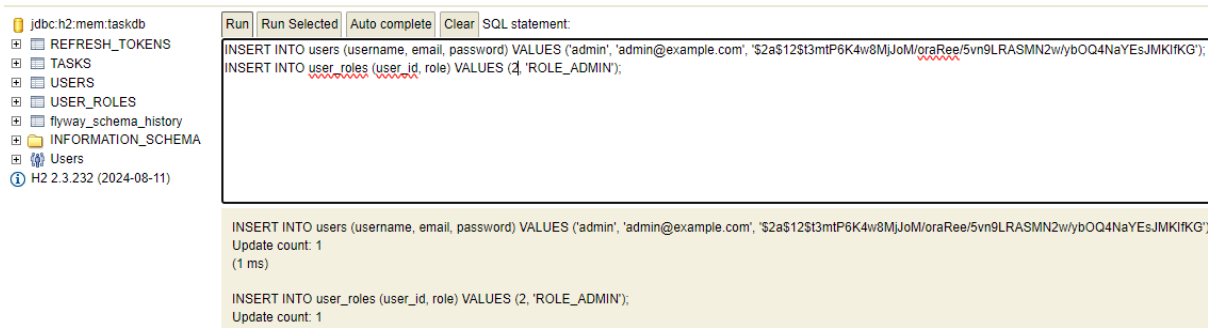
Links

No links

Author : Salahaldin Shehada



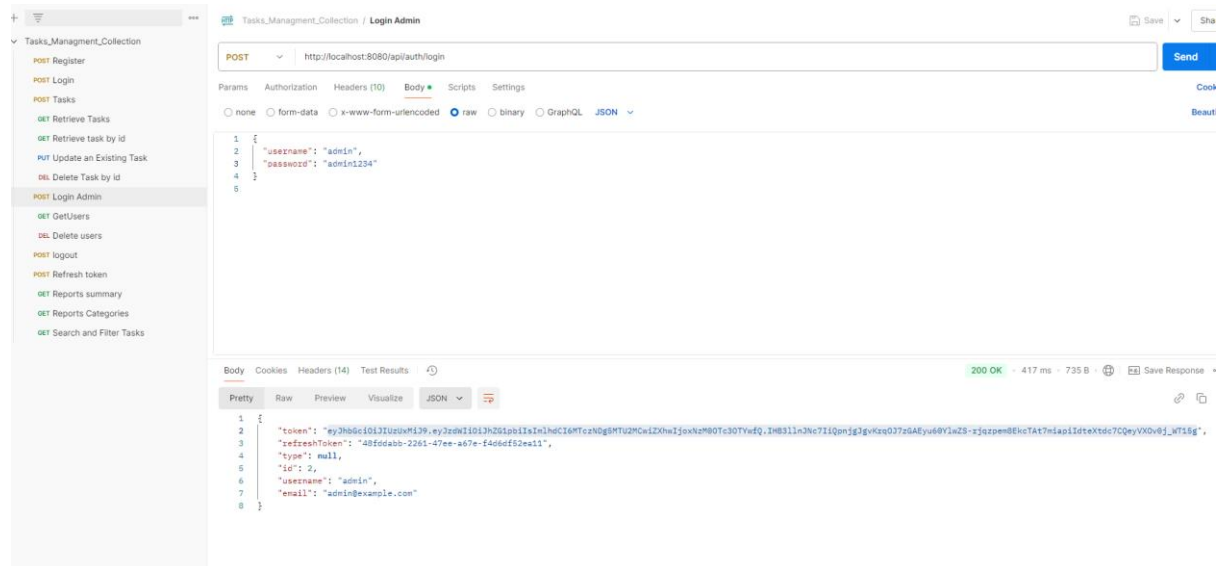
Admin has to be inserted manually into the database (for security reasons) :



note: the password is hashed as security requirement .

Author : Salahaldin Shehada

Only admin can view/delete users using the admin token :



Author : Salahaldin Shehada

GET ▼ | http://localhost:8080/api/admin/users

Params Authorization Headers (8) Body Scripts Settings

Headers 7 hidden

	Key	Value
<input checked="" type="checkbox"/>	Authorization	Bearer eyJhbGciOiJIUzUxMiJ9.eyJzdWIiOi
	Key	Value

BodyCookiesHeaders (14)Test Results

PrettyRawPreviewVisualizeJSON

```
1  [
2    {
3      "id": 1,
4      "username": "testuser1",
5      "email": "testuser@example.com",
6      "roles": [
7        "ROLE_USER"
8      ]
9    },
10   {
11     "id": 2,
12     "username": "admin",
13     "email": "admin@example.com",
14     "roles": [
15       "ROLE_ADMIN"
16     ]
17   }
18 ]
```

Author : Salahaldin Shehada

+

...

Tasks\_Managment\_Collection

POST

Register

POST

Login

POST

Tasks

GET

Retrieve Tasks

GET

Retrieve task by id

PUT

Update an Existing Task

DEL

Delete Task by id

POST

Login Admin

GET

GetUsers

DEL

Delete users

POST

logout

POST

Refresh token

GET

Reports summary

GET

Reports Categories

GET

Search and Filter Tasks

HTTP

Tasks\_Managment\_Collection / Delete users

DELETE

▼

http://localhost:8080/api/admin/users/1

ParamsAuthorizationHeaders (8)BodyScriptsSettings

Headers

7 hidden

BodyCookiesHeaders (14)Test Results

PrettyRawPreviewVisualizeJSON▼

1

{

2

"message": "User deleted successfully."

3

}

Viewing sample tasks from the database :

jdbc:h2:mem:taskdb

REFRESH\_TOKENS

TASKS

USERS

USER\_ROLES

flyway\_schema\_history

INFORMATION\_SCHEMA

Users

H2 2.3.232 (2024-08-11)

RunRun SelectedAuto completeClearSQL statement:

SELECT \* FROM TASKS

SELECT \* FROM TASKS;

ID	CATEGORY	DESCRIPTION	DUE_DATE	PRIORITY	STATUS	TITLE	USER_ID
1	LEARNING	Thoroughly read and understand the latest Spring Framework documentation.	2024-12-22	LOW	COMPLETED	Read Spring Documentation	1
2	WORK	some stuff	2024-12-24	HIGH	PENDING	Some task2	1
3	LEARNING	testing	2024-12-23	LOW	COMPLETED	R4	1
4	LEARNING	testing	2024-12-25	LOW	COMPLETED	R10	1

(4 rows, 0 ms)

Edit