

TweetApp – Backend

TweetApp

Created By –

Rahul Ranjan

Employee Id: 2048766

Technology used:

- ASP.NET Core 6.0
- MongoDB (Azure Cosmos DB)
- Angular CLI (14.0.4)
- Karma & Jasmine
- Node (16.10.0)
- Docker
- Elasticsearch Image Of Docker
- LogStash Image Of Docker
- Kibana Image Of Docker
- Jaeger Image Of Docker
- Zipkin Image Of Docker
- XUnit (For Unit Testing)
- Moq (For Unit Testing)
- FluentAssertions (For Unit Testing)
- Prometheus
- Grafana

Swagger UI

localhost:52106/swagger/index.html

Select a definition RestApi v1

RestApi 1.0 OAS3

http://localhost:52106/swagger/v1/swagger.json

Authorize

Authenticate

POST /api/Authenticate/Authenticate

Profile

GET /api/Profile/GetUser/{loginId}

User

POST /api/User/Add

DELETE /api/User/DeleteAll

DELETE /api/User/Delete/{id}

GET /api/User/GetById/{id}

Windows taskbar: Type here to search, 31°C, 18:55, 30-07-2022

Swagger UI

localhost:52106/swagger/index.html

User

POST /api/User/Add

DELETE /api/User/DeleteAll

DELETE /api/User/Delete/{id}

GET /api/User/GetById/{id}

GET /api/User/Get

PUT /api/User/Update

UserSearch

GET /api/UserSearch/SearchUser/{word}

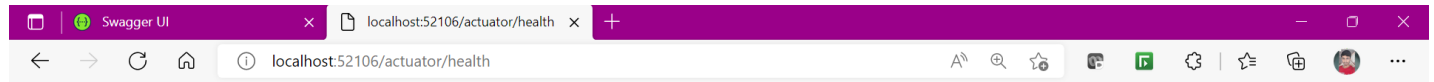
Schemas

User >

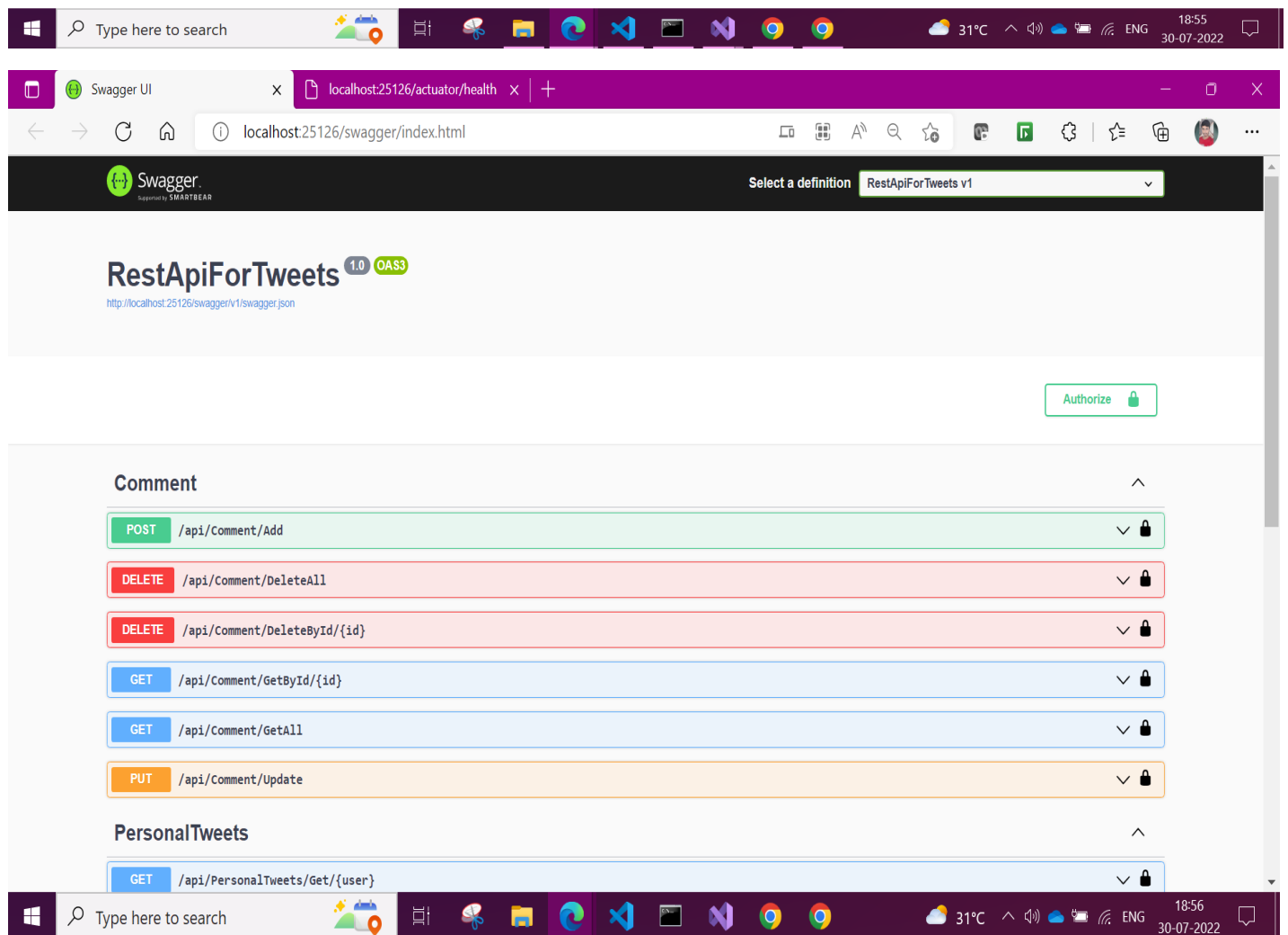
UserCred >

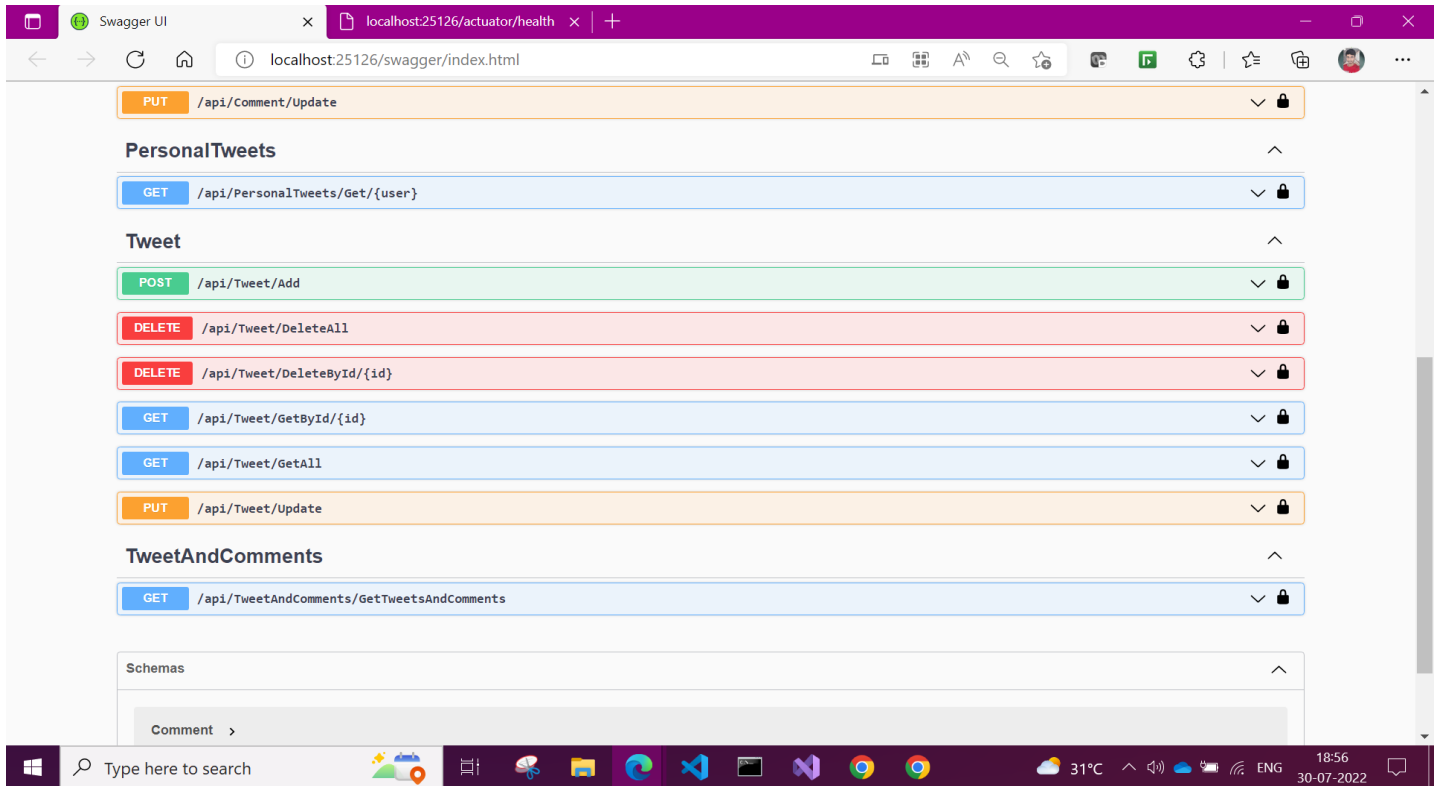
Windows taskbar: Type here to search, 31°C, 18:55, 30-07-2022

This is Steeltoe Health Actuator Implementation....



```
{"status":"UP","details":{"diskSpace":
{"total":511463882752,"free":184485609472,"threshold":10485760,"statu
s":"UP"},"readiness":
{"ReadinessState":"ACCEPTING_TRAFFIC"},"liveness":
{"LivenessState":"CORRECT"}}}
```





```
{"status":"UP","details":{"liveness":  
{"LivenessState":"CORRECT"},"readiness":  
{"ReadinessState":"ACCEPTING_TRAFFIC"},"diskSpace":  
{"total":511463882752,"free":184484208640,"threshold":10485760,"statu  
s":"UP"}}}
```



Authentication & authorization is needed to access resources....

The image shows a web browser window displaying the Swagger UI for a REST API. The browser's address bar shows the URL `localhost:52106/swagger/index.html`. The UI lists several endpoints:

- DELETE** `/api/User/Delete/{id}`
- GET** `/api/User/GetById/{id}`
- GET** `/api/User/Get`
- PUT** `/api/User/Update`

The `/api/User/Get` endpoint is selected, showing its details:

- Parameters:** No parameters.
- Execute:** A blue button to execute the request.
- Responses:** A table showing the response for status code 200.

Code	Description	Links
200	Success	No links

The Windows taskbar at the bottom shows the system clock as 19:15 on 30-07-2022, with a temperature of 32°C.

The image shows the Swagger UI after the `/api/User/Get` endpoint has been executed. The **Execute** button is highlighted, and the **Responses** section shows the result of the request.

Responses

Code **Description**

401
Undocumented Error: Unauthorized

Response headers

```
date: Sat, 30 Jul 2022 13:45:42 GMT
server: Microsoft-IIS/10.0
transfer-encoding: chunked
www-authenticate: Bearer
x-powered-by: ASP.NET
```

The **Request URL** is `http://localhost:52106/api/User/Get`. The **Server response** is shown in the **Responses** section.

The screenshot displays the Swagger UI interface for a REST API. The browser address bar shows the URL `localhost:52106/swagger/index.html`. The main heading is **Authenticate**. Below it, the method **POST** and the endpoint `/api/Authenticate/Authenticate` are shown. There are **Parameters** and **Request body** tabs. The **Request body** tab is active, showing a JSON object: `{ "loginId": "Sam", "password": "India!$A4@5" }`. The **Responses** tab is also visible. At the bottom, there are **Execute** and **Clear** buttons. The Windows taskbar at the bottom shows the time as 19:16 on 30-07-2022.

Swagger UI

localhost:52106/actuator/health

+

localhost:52106/swagger/index.html

Responses

Curl

```
curl -X 'POST' \
'http://localhost:52106/api/Authenticate/Authenticate' \
-H 'accept: */*' \
-H 'Content-Type: application/json' \
-d '{
  "loginId": "Sam",
  "password": "IndiaUSA46@$"
}'
```

Request URL

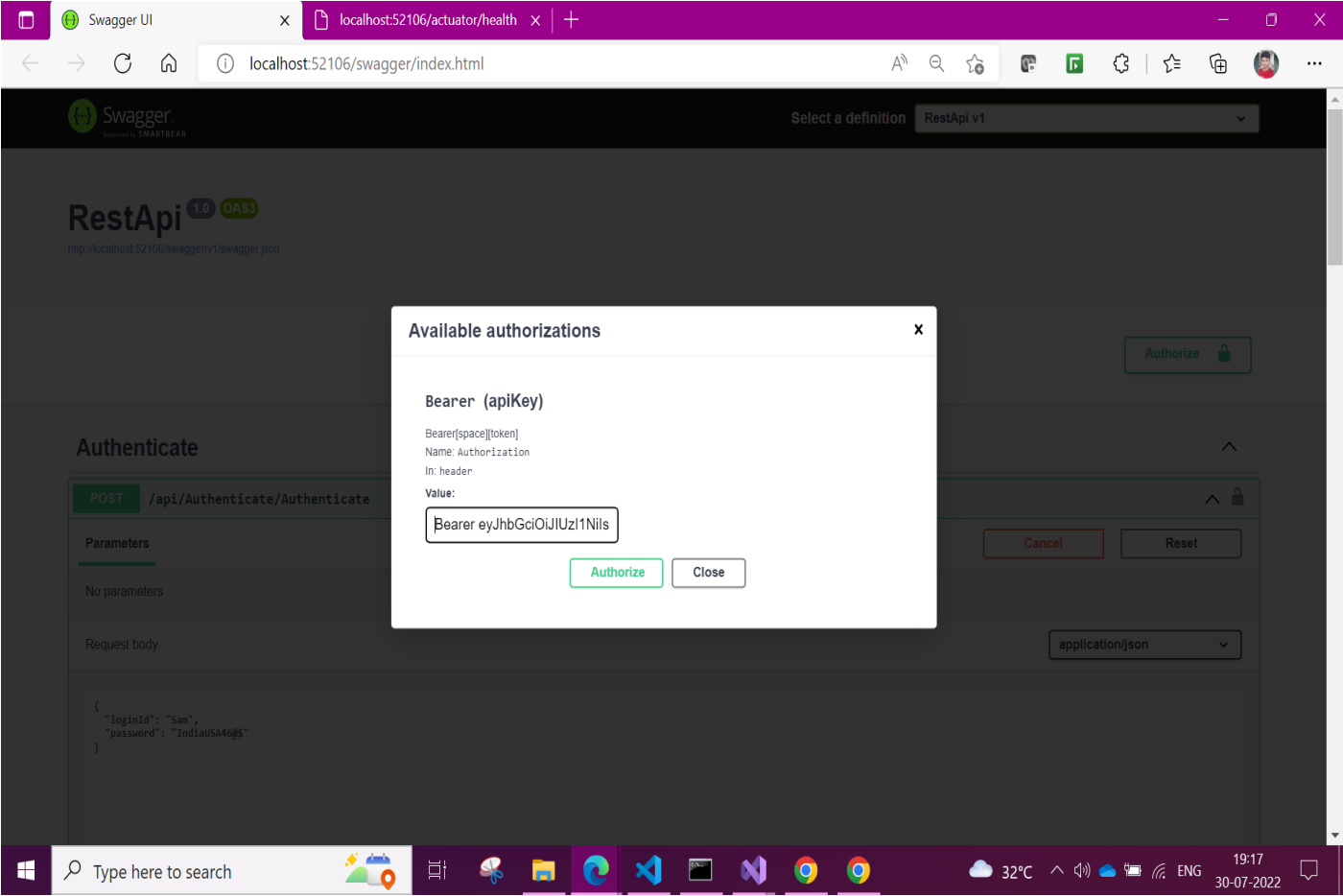
http://localhost:52106/api/Authenticate/Authenticate

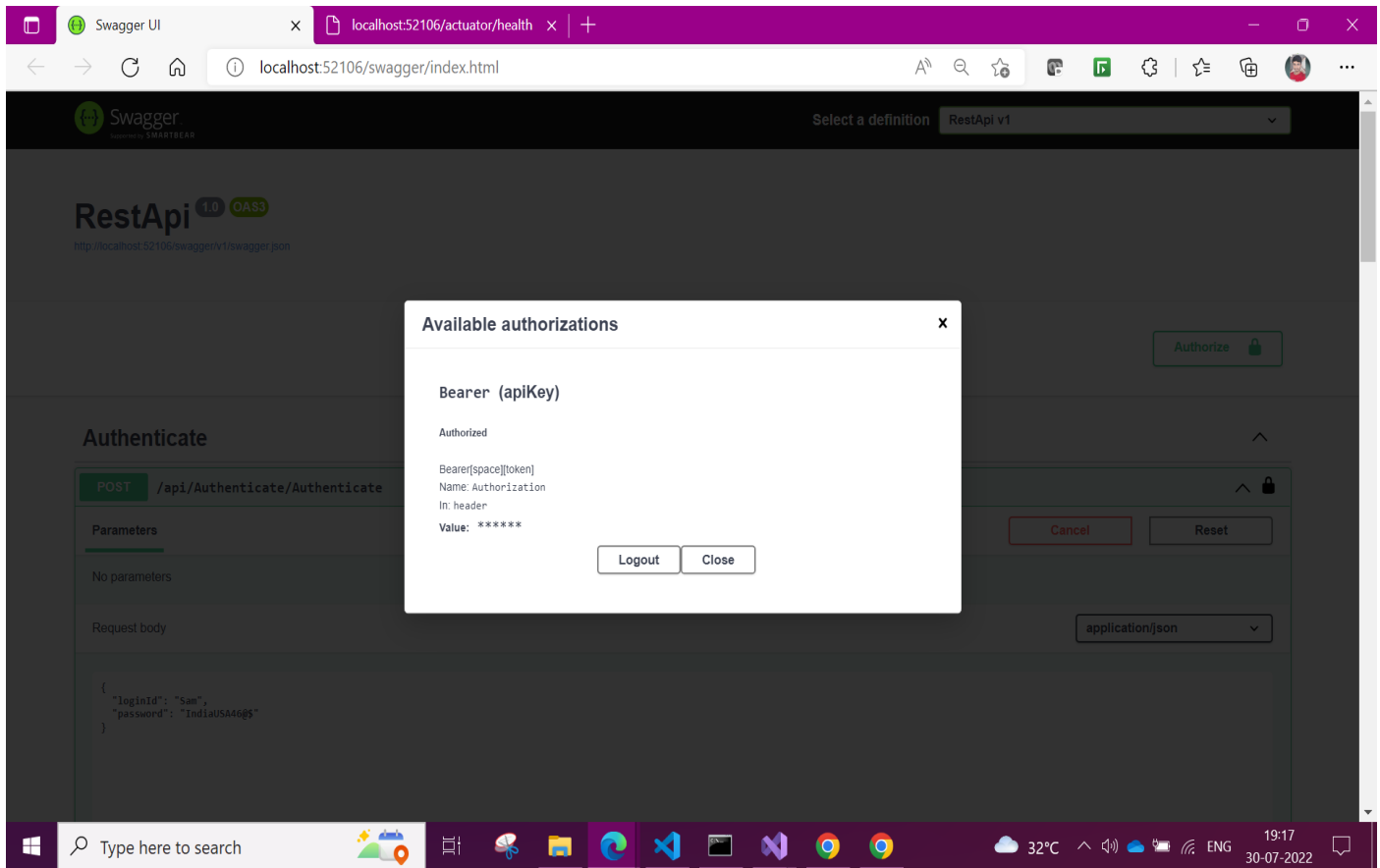
Server response

Code	Details
200	<div><div>Response body</div><div><pre>{ "loginId": "Sam", "token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ1bm90e21iOiJ1bm90e21iLCJyb290Ij0iZ2NTKX00g3ZnZsImV4cCI6MTY1OTQ0OTY3NCwiaWF0IjoxNjU5MTg4MzcyOQ.93If4YfC1bt2Mn_hAKq1W1JuDYQF8nncU3Du9-1BS", "validFrom": "2022-07-30T13:46:14Z", "validTo": "2022-07-30T14:01:14Z" }</pre></div><div>Download</div></div> <div><div>Response headers</div><div><pre>access-control-allow-origin: * content-type: application/json; charset=utf-8 date: Sat, 30 Jul 2022 13:46:14 GMT server: Microsoft-IIS/10.0 transfer-encoding: chunked x-powered-by: ASP.NET</pre></div></div>

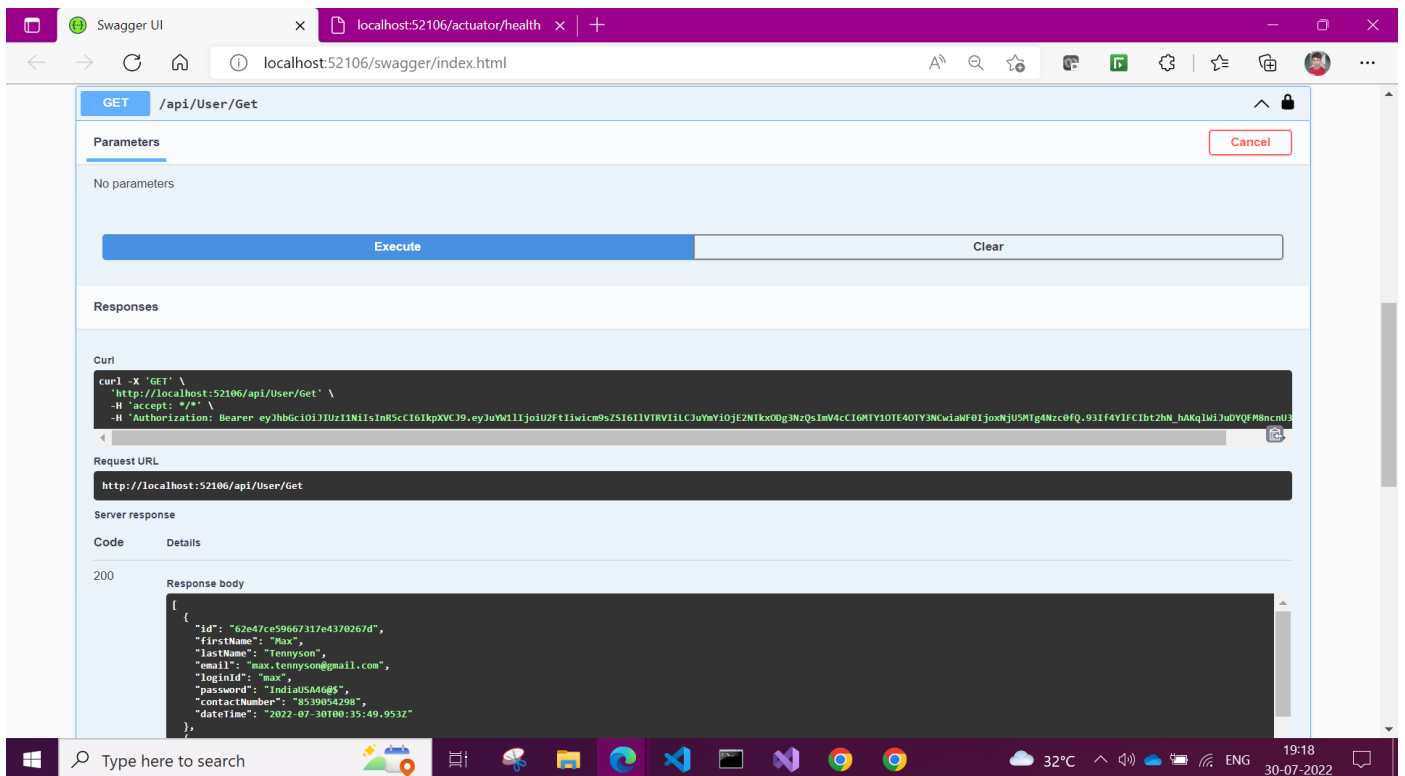
Responses

Code	Description	Links
200	Success	No links





The Api is accessible only after successful authentication and authorization....



Swagger UI

localhost:52106/actuator/health

localhost:52106/swagger/index.html

```
curl -X 'GET' \
  'http://localhost:52106/api/User/Get' \
  -H 'accept: */*' \
  -H 'Authorization: Bearer eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ1bWl1Ijo1IiwiaWF0IjE2NTkxMDg3MzQzImV4cCI6MTY1OTE4OTY3NCwiYWFrOiJoxNjU5MTg4Nzc0fQ.93If4Y1fC1bt2hM_hAKq1wiJudyQF#8acmij
```

Request URL

http://localhost:52106/api/User/Get

Server response

Code Details

200

Response body

```
{
  "id": "62e47ce59667317e4370267d",
  "firstName": "Max",
  "lastName": "Tennyson",
  "email": "max.tennyson@gmail.com",
  "loginId": "max",
  "password": "IndiaUSA46g$",
  "contactNumber": "8539854298",
  "dateTime": "2022-07-30T00:35:49.953Z"
},
{
  "id": "62e47dc09667317e4370267e",
  "firstName": "Sam",
  "lastName": "Kumar",
  "email": "kumar.sam@gmail.com",
  "loginId": "Sam",
  "password": "IndiaUSA46g$",
  "contactNumber": "4466228848",
  "dateTime": "2022-07-30T00:39:28.653Z"
},
{
  "id": "62e491106a0a12acd3127c1e",
  "firstName": "Rahul",
  "lastName": "Ranjan",
  "email": "rahulwizard@gmail.com",
  "loginId": "wizard2",
  "password": "IndiaUSA46g$"
}
```

Response headers

```
content-type: application/json; charset=utf-8
date: Sat,30 Jul 2022 13:47:36 GMT
server: Microsoft-IIS/10.0
transfer-encoding: chunked
x-powered-by: ASP.NET
```

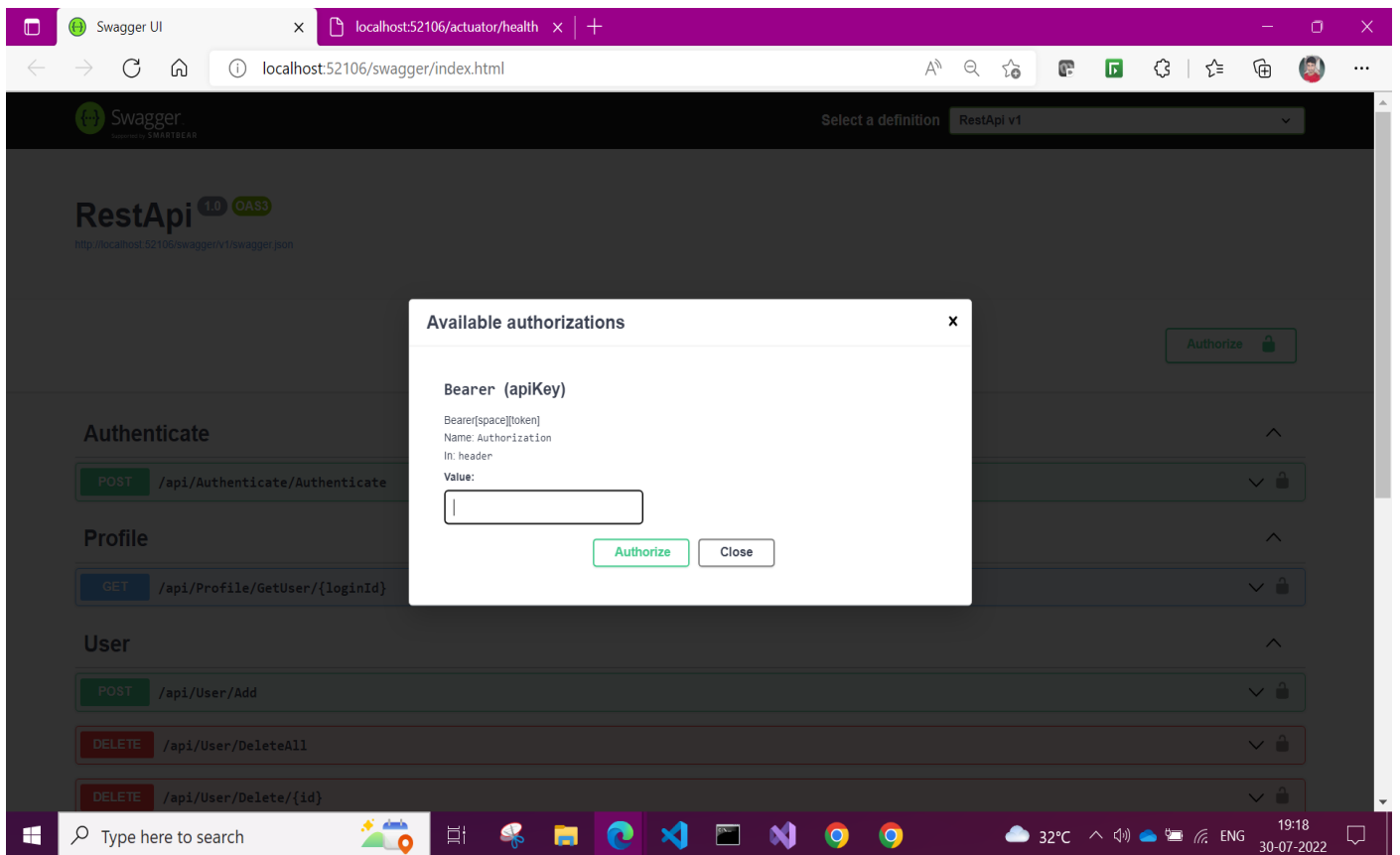
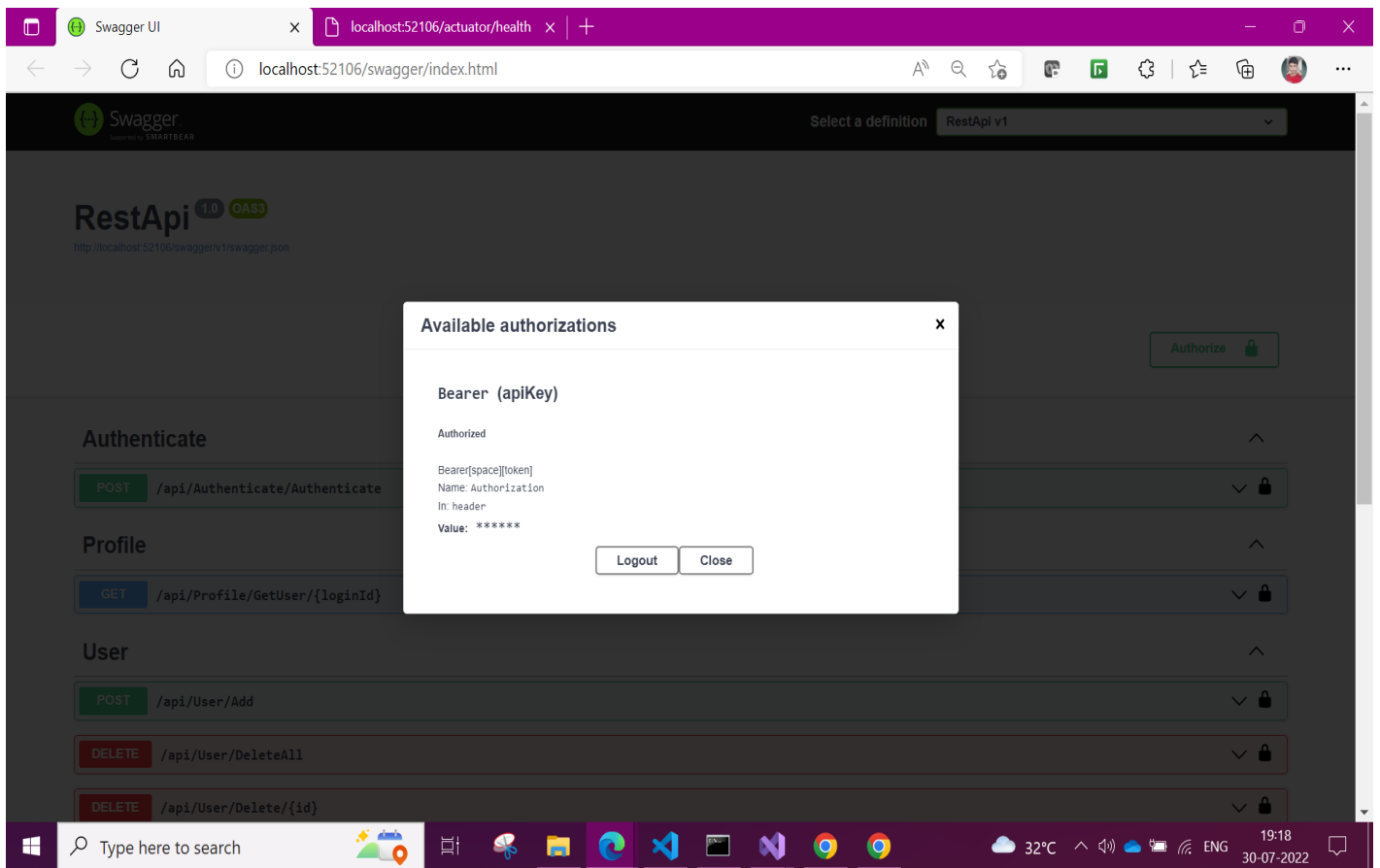
Type here to search

32°C

19:17

30-07-2022

Logging out....



Second Api

Swagger UI | localhost:25126/actuator/health | localhost:25126/swagger/index.html

TweetAndComments

GET /api/TweetAndComments/GetTweetsAndComments

Parameters

No parameters

Execute Clear

Responses

Curl

```
curl -X 'GET' \
  'http://localhost:25126/api/TweetAndComments/GetTweetsAndComments' \
  -H 'accept: */*' \
  -H 'Authorization: Bearer eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ0eWw1IjoiaUZFt1Iiwicm9sZSI6I1VTRV11LCJ0eWw1OjE2NTkxODcyMzMsImV4cCI6MTY1OTI4ODU3MiwiaWF0IjoxNjU5MTg3Mjc3fQ.skyj-k11B0XX087Na19f9YIu0s1GtZfY113m'
```

Request URL

http://localhost:25126/api/TweetAndComments/GetTweetsAndComments

Server response

Code	Details
401	Unauthorized

Response headers

```
date: Sat, 30 Jul 2022 13:49:20 GMT
server: Microsoft-IIS/10.0
transfer-encoding: chunked
www-authenticate: Bearer realm="Swagger UI", error="Invalid token", error_description="The token expired at '2023/07/30 13:36:43'"
```

Swagger UI | localhost:25126/actuator/health | localhost:25126/swagger/index.html

RestApiForTweets

1.0 OAS3

http://localhost:25126/swagger/v1/swagger.json

Select a definition: RestApiForTweets v1

Comment

- POST /api/Comment/Add
- DELETE /api/Comment/DeleteAll
- DELETE /api/Comment/DeleteById/{id}
- GET /api/Comment/GetById/{id}
- GET /api/Comment/GetAll
- PUT /api/Comment/Update

PersonalTweets

Available authorizations

Bearer (apiKey)

Bearer[space]token

Name: Authorization

In: header

Value:

Bearer eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ0eWw1IjoiaUZFt1Iiwicm9sZSI6I1VTRV11LCJ0eWw1OjE2NTkxODcyMzMsImV4cCI6MTY1OTI4ODU3MiwiaWF0IjoxNjU5MTg3Mjc3fQ.skyj-k11B0XX087Na19f9YIu0s1GtZfY113m

Authorize Close

Swagger UI

localhost:25126/swagger/index.html

RestApiForTweets

1.0 OAS3

http://localhost:25126/swagger/v1/swagger.json

Available authorizations

Bearer (apiKey)

Authorized

Bearer[space](token)
Name: Authorization
In: header
Value: *****

Logout Close

Comment

- POST /api/Comment/Add
- DELETE /api/Comment/DeleteAll
- DELETE /api/Comment/DeleteById/{id}
- GET /api/Comment/GetById/{id}
- GET /api/Comment/GetAll
- PUT /api/Comment/Update

PersonalTweets

Type here to search

32°C 19:20 30-07-2022

Swagger UI

localhost:25126/swagger/index.html

TweetAndComments

GET /api/TweetAndComments/GetTweetsAndComments

Parameters

No parameters

Execute Clear

Responses

Curl

```
curl -X 'GET' \
  'http://localhost:25126/api/TweetAndComments/GetTweetsAndComments' \
  -H 'accept: */*' \
  -H 'Authorization: Bearer eyJhbGciOiJIU2I1NiIsInR5cCI6IkpXVCJ9.eyJ1bm90e3Z5IjoiIiwiaWF0Ijoi2022-07-30T13:18:53.984Z', 'comments': [
```

Request URL

http://localhost:25126/api/TweetAndComments/GetTweetsAndComments

Server response

Code Details

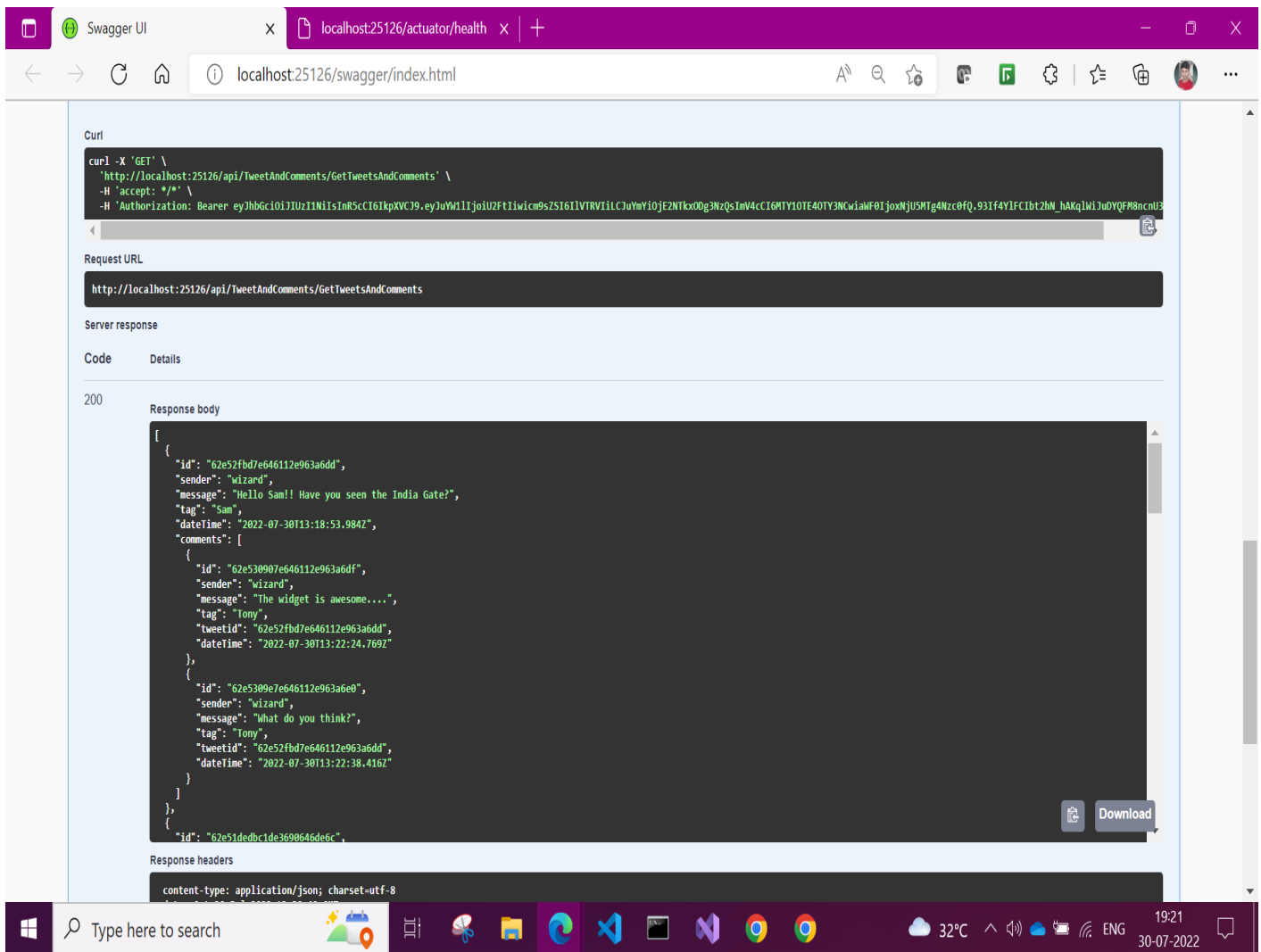
200

Response body

```
{
  "id": "62e52fbd7e646112e963a6dd",
  "sender": "wizard",
  "message": "Hello Sam! Have you seen the India Gate?",
  "tag": "Sam",
  "datetime": "2022-07-30T13:18:53.984Z",
  "comments": [
```

Type here to search

32°C 19:20 30-07-2022



- These webapis provide interface to the Azure Cosmos DB used as the database.
- JWT Bearer Authentication & Authorization is used here.
- The endpoints cannot be accessed without being authorized.
- Two apis are used.
- The angular frontend interacts with these two apis to for registration, authentication, authorization (valid for 15 minutes – after 15 minutes, the data becomes unavailable and the user is redirected to the index page).
- Steeltoe health actuators are used for both these apis.
- OpenTelemetry with Jaeger & Zipkin is used.
- Traces and Logs are collected by ElasticSearch, Logstash, Serilog and Kibana
- Metrics are collected by Prometheus and Grafana.
- Service layer provides interface to the MongoDB database.