

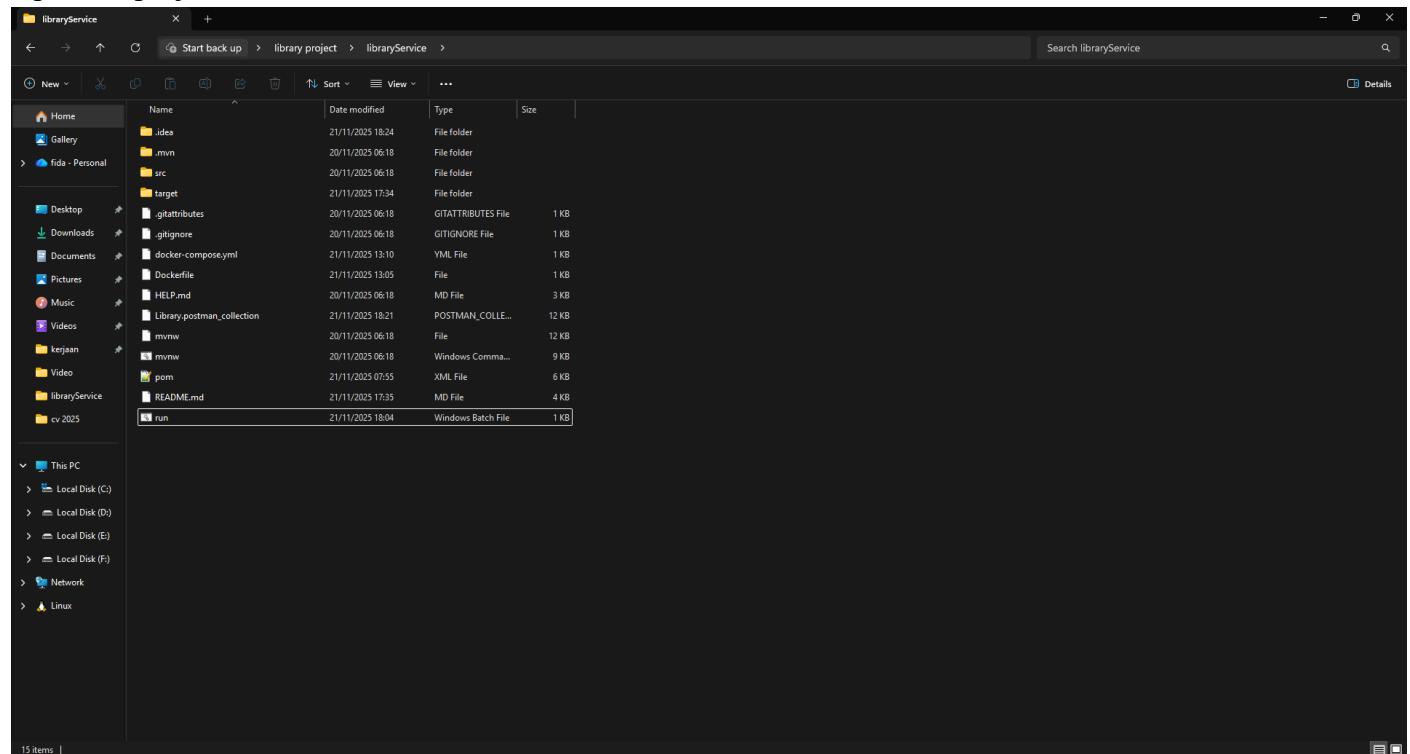
# Library Service App Documentation

This project includes a README.md file that contains the project specifications, as well as a Library.postman\_collection file for testing the APIs using Postman.

## How To Run

Make sure already install docker and running it  
or you can download on <https://www.docker.com/products/docker-desktop>

Open the project then double click on file run.bat



Or install the app first on command prompt by using (Optional because the app already installed)  
 .\mvnw clean package -DskipTests

```
C:\Windows\System32\cmd.exe x + v
Microsoft Windows [Version 10.0.26100.7171]
(c) Microsoft Corporation. All rights reserved.

C:\Users\505\Desktop\library project\libraryService>.\mvnw clean package -DskipTests
[INFO] Scanning for projects...
[WARNING]
[WARNING] Some problems were encountered while building the effective model for com.library:library-service:jar:0.0.1-SNAPSHOT
[WARNING] *dependencies.dependency.(groupId:artifactId:type:classifier)' must be unique: org.springframework.boot:spring-boot-starter-mail:jar -> duplicate declaration of version (?) @ line 87, column 21
[WARNING]
[WARNING] It is highly recommended to fix these problems because they threaten the stability of your build.
[WARNING]
[WARNING] For this reason, future Maven versions might no longer support building such malformed projects.
[WARNING]
[INFO] -----
[INFO] < com.library:library-service > -----
[INFO] Building library-service 0.0.1-SNAPSHOT
[INFO] from pom.xml
[INFO] -----
[INFO] [ jar ] -----
[INFO] --- clean:3.4.1:clean (default-clean) @ library-service ---
[INFO] Deleting C:\Users\505\Desktop\library project\libraryService\target
[INFO] -----
[INFO] --- resources:3.3.1:resources (default-resources) @ library-service ---
[INFO] Copying 1 resource from src\main\resources to target\classes
[INFO] Copying 0 resource from src\main\resources to target\classes
[INFO] -----
[INFO] --- compiler:3.14.1:compile (default-compile) @ library-service ---
[INFO] Recompiling the module because of changed source code.
[INFO] Compiling 49 source files with javac [debug parameters release 21] to target\classes
[INFO] -----
[INFO] --- resources:3.3.1:testResources (default-testResources) @ library-service ---
[INFO] skip non existing resourceDirectory C:\Users\505\Desktop\library project\libraryService\src\test\resources
[INFO] -----
[INFO] --- compiler:3.14.1:testCompile (default-testCompile) @ library-service ---
[INFO] Recompiling the module because of changed dependency.
[INFO] Compiling 17 source files with javac [debug parameters release 21] to target\test-classes
[INFO] -----
[INFO] --- surefire:3.5.0:test (default-test) @ library-service ---
[INFO] Tests are skipped.
[INFO] -----
[INFO] --- jar:3.4.2:jar (default-jar) @ library-service ---
[INFO] Building jar: C:\Users\505\Desktop\library project\libraryService\target\library-service-0.0.1-SNAPSHOT.jar
[INFO] -----
[INFO] --- spring-boot:3.5.7:repackage (repackage) @ library-service ---
[INFO] Replacing main artifact C:\Users\505\Desktop\library project\libraryService\target\library-service-0.0.1-SNAPSHOT.jar with repackaged archive, adding nested dependencies in BOOT-INF/.
[INFO] The original artifact has been renamed to C:\Users\505\Desktop\library project\libraryService\target\library-service-0.0.1-SNAPSHOT.jar.original
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 8.043 s
[INFO] Finished at: 2025-11-21T19:03:48+07:00
```

After the build success you can run the app by using file run or using command docker compose up –build

```
C:\Windows\System32\cmd.exe x + v
C:\Users\505\Desktop\library project\libraryService>docker compose up --build
time="2025-11-21T19:06:00+07:00" level=warning msg="C:\Users\505\Desktop\library project\libraryService\docker-compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Building 8.1s (11/1) FINISHED
=> [internal] load local bake definitions
=> => reading from stdin 568B
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 197B
=> [internal] load metadata for docker.io/library/eclipse-temurin:21-jdk-jammy
=> [auth] library/eclipse-temurin:pull token for registry-1.docker.io
=> [internal] load _dockergignore
=> => transferring context: 2B
=> [1/3] FROM docker.io/library/eclipse-temurin:21-jdk-jammy@sha256:81ad1240d91eeafab4154e9ed2310b67cb966caad1d235232ae10abcblfae2
=> => resolve docker.io/library/eclipse-temurin:21-jdk-jammy@sha256:81ad1240d91eeafab4154e9ed2310b67cb966caad1d235232ae10abcblfae2
=> [internal] load build context
=> => transferring context: 73.2MB
=> CACHED [2/3] WORKDIR /libraryApp
=> [3/3] COPY target/* .jar libraryApp.jar
=> exporting to image
=> exporting layers
=> exporting manifest sha256:d80ec8a53921efd9163581ba7283827d3ad97f31a4bf827705b501d7030b473f
=> exporting config sha256:5ee17c08b3932c6bb36064a4c2869e88165a2ec0ddba10c52c6a3e1d133b017
=> => exporting attachment manifest sha256:cfc3419b365b1c156e9cab87fcdb30abae809ecc3c09bba867de64a0c21617
=> => exporting manifest list sha256:ea09d0d0ade60d7fbab92877b07bcf096edb3c53a966a7eb439986212d9998a0
=> => naming to docker.io/library/libraryservice-app:latest
=> => unpacking to docker.io/library/libraryservice-app:latest
=> resolving provenance for metadata file
[+] Running
  \_library-service-app      Built
  \_Container library-service Recreated
Attaching to library-service, postgres-local, redis-local
postgres-local | PostgreSQL Database directory appears to contain a database; Skipping initialization
postgres-local |
redis-local 1:21 Nov 2025 12:06:09.376 * o000o000o000 Redis is starting o000o000o000o
redis-local 1:21 Nov 2025 12:06:09.376 * Redis version=7.4.7, bits=64, commit=00000000, modified=0, pid=1, just started
redis-local 1:21 Nov 2025 12:06:09.376 * Configuration loaded
redis-local 1:M 21 Nov 2025 12:06:09.377 * monotonic clock: POSIX_clock_gettime
redis-local 1:M 21 Nov 2025 12:06:09.380 * Running mode=standalone, port=6379.
redis-local 1:H 21 Nov 2025 12:06:09.381 * Server initialized
redis-local 1:H 21 Nov 2025 12:06:09.383 * Reading RDB base file on AOF loading...
redis-local 1:H 21 Nov 2025 12:06:09.383 * Loading RDB produced by version 7.4.7
redis-local 1:H 21 Nov 2025 12:06:09.383 * RDB age 113727 seconds
redis-local 1:H 21 Nov 2025 12:06:09.383 * RDB memory usage when created 0.99 Mb
redis-local 1:M 21 Nov 2025 12:06:09.383 * RDB is base AOF

redis-local | 1:M 21 Nov 2025 12:06:09.383 * Done loading RDB, keys loaded: 0, keys expired: 0.
postgres-local | 2025-11-21 12:06:09.515 UTC [1] LOG:  starting PostgreSQL 16.11 (Debian 16.11-1.pgdg13+1) on x86_64-pc-linux-gnu, compiled by gcc (Debian 14.2.0-19) 14.2.0, 64-bit
redis-local | 1:M 21 Nov 2025 12:06:09.383 * DB loaded from base file appendonly.aof.1.base.rdb: 0.001 seconds
```

# Swagger And Login Documentation

Swagger url : <http://localhost:8080/swagger-ui/index.html>

The screenshot shows the Swagger UI interface for the Library Service API. At the top, it displays the title "Library Service" with a version of 0.0 and OAS 3.0. Below the title, there's a "Servers" dropdown set to "http://localhost:8080 - Generated server url" and an "Authorize" button. The API is organized into several sections:

- Articles**: Main API for managing article by role
  - POST /articles/update**: Update article controled by role, author id auto generate form token login except super admin, and isPublic auto false if not filled
  - POST /articles/create**: Create new article, author id auto generate form token login except super admin, and isPublic auto false if not filled
  - GET /articles/getAll/{sortType}**: Get all article then sorted using bubble sort algorithm
  - DELETE /articles/delete/{id}**: Delete article controled by role
- Auth**: User Login & MFA
  - POST /users/verify-otp**: Step 2 login using username/email and OTP and get JWT
  - POST /users/login**: Step 1 login using username/email and password then send otp to email
- Audit**: Audit log for super admin
  - GET /audit/logs/{sortType}**: view audit log sorted using bubble sort algorithm
- User**: User Management

\*use this super admin account for first time login

username : fida  
password : P@ssw0rd

These credentials are used only for accessing the email inbox to retrieve the OTP sent during Multi-Factor Authentication:

Email : contact.fidamuhrifqi@gmail.com  
Email Password : Test123123!

**login using api /users/login**

This screenshot shows the same Swagger UI interface, but the focus is on the "User Management" section under the "User" category. The "POST /users/login" endpoint is highlighted with a red box, indicating it is the target for logging in. The "POST /users/verify-otp" endpoint is also highlighted with a red box, indicating it is part of the two-step login process.

POST /users/verify-otp Step 2 login using username/email and OTP and get JWT

POST /users/login Step 2 login using username/email and password then send otp to email

Parameters

No parameters

Request body required

```
{
  "username": "fida",
  "otp": "688870"
}
```

application/json

Execute Clear

Responses

Curl

```
curl -X POST \
  http://localhost:8000/users/login \
  -H 'Content-Type: application/json' \
  -H 'Authorization: Bearer eyJhbGciOiJIUzI1NiJ9.ejZudmVjdG9yZWQ1N2lC1zYjQ0OTY1MWhvbmVzIjwNCgijC1c1zYkba1z2p2B11C3yba1z1jz015QWVjQgqas1lCjyQjQ1e3NjYK1qyRyx1w4c1C0Hr2Hez3Bq'
  -d '{
    "username": "fida",
    "password": "fida123"
}'
```

Request URL

<http://localhost:8000/users/login>

Server response

Code Details

200

Response body

```
{
  "message": "OTP Telah dikirim ke Email",
  "username": "fida"
}
```

Download

## Login success check email to get OTP

Gmail

Compose

Inbox

Starred

Snoozed

Sent

Drafts

Purchases

More

Labels

Search mail

Fidas Library OTP Code > Inbox x

muhurifqifida@gmail.com to me ▾

Kode OTP kamu adalah: 688870  
Valid selama 5 menit.

1 deleted message in this conversation. View message or delete forever.

Reply Forward

7:20 PM (0 minutes ago) ⭐ ⓘ ↗

## Hit user/verify-otp using OTP code from email

Auth User Login & MFA

POST /users/verify-otp Step 2 login using username/email and OTP and get JWT

Parameters

No parameters

Request body required

```
{
  "username": "fida",
  "otp": "688870"
}
```

application/json

Execute Clear

Responses

Curl

```
curl -X POST \
  http://localhost:8000/users/verify-otp \
  -H 'Content-Type: application/json' \
  -H 'Authorization: Bearer eyJhbGciOiJIUzI1NiJ9.ejZudmVjdG9yZWQ1N2lC1zYjQ0OTY1MWhvbmVzIjwNCgijC1c1zYkba1z2p2B11C3yba1z1jz015QWVjQgqas1lCjyQjQ1e3NjYK1qyRyx1w4c1C0Hr2Hez3Bq'
  -d '{
    "username": "fida",
    "otp": "688870"
}'
```

Request URL

<http://localhost:8000/users/verify-otp>

Server response

Code Details

200

Response body

```
{
  "username": "fida",
  "otp": "688870",
  "message": "OTP verified successfully",
  "token": "eyJhbGciOiJIUzI1NiJ9.ejZudmVjdG9yZWQ1N2lC1zYjQ0OTY1MWhvbmVzIjwNCgijC1c1zYkba1z2p2B11C3yba1z1jz015QWVjQgqas1lCjyQjQ1e3NjYK1qyRyx1w4c1C0Hr2Hez3Bq"
}
```

Download

A detailed description of the response body:

- username:** fida
- otp:** 688870
- message:** OTP verified successfully
- token:** A JWT token: eyJhbGciOiJIUzI1NiJ9.ejZudmVjdG9yZWQ1N2lC1zYjQ0OTY1MWhvbmVzIjwNCgijC1c1zYkba1z2p2B11C3yba1z1jz015QWVjQgqas1lCjyQjQ1e3NjYK1qyRyx1w4c1C0Hr2Hez3Bq

Verify Otp success then get the token then click on Authorize button

The screenshot shows the Swagger UI interface for the 'Library Service'. At the top, it displays the URL 'localhost:8080/swagger-ui/index.html#/Auth/verifyOtp'. The main content area is titled 'Library Service' with 'OAS 3.0'. Below this, there's a section for 'Articles' with two POST methods listed: '/articles/update' and '/articles/create'. In the top right corner of the main content area, there is a green 'Authorize' button with a lock icon, which is highlighted with a red box.

Put the token value to the value text area then click Authorize to access another APIs

This screenshot shows the 'Available authorizations' dialog box from the Swagger UI. It lists a single entry: 'bearer-jwt (http, Bearer)'. Below it, there is a text input field containing the value 'V9TRyU1G3QC4MN8QYJIYI'. At the bottom of the dialog box are two buttons: 'Authorize' (highlighted with a red box) and 'Close'.

## APIs Documentation (using postman “more flexible”) Using Super Admin

\* Library Collection available in project folder with name *Library.postman\_collection*. Don't forget to change the token.

All APIs except login and verify OTP need header with format *Authorization:Bearer <token from login>*

This screenshot shows a POST request in Postman to the URL 'http://localhost:8080/articles/create'. The 'Headers' tab is selected, showing the 'Authorization' header set to 'Bearer eyJhbGciOiJIUzI1NiJ9.eyJzdWIiOiI2OGY5YTE5NC1hMzEyLTQ1OTYtYmMwYy00MzlhNjIwMGYiNjEiLCJ1c2VybmtZSI6ImZpZGEiLCJyb2xlijoiaUVRVJfQUFRNSU4iLCJpYXQiOjE3NjM3MDU4MzIsImV4cCI6MTc2Mzc0OTAzMn0.zk6pzyJxIpG92J2AlTieHN2nTXAy3AbzZn08362Sn451'. The 'Body' tab shows the JSON response: { "id": "8f595a1e-be08-443f-b9e8-743f0bb25925", "title": "Artikel Punya Fida Special Edition", "content": "Ini isi artikel Punya Fida Special Edition", "authorId": "01e3d3e1-c0f9-44e2-9b03-c3b63e2d557f", "createdAt": "2025-11-21 20:00:01", "updatedAt": "2025-11-21 20:00:01" }. The response status is '200 OK'.

## Article APIs

### - Create Article

The screenshot shows a Postman request to `http://localhost:8080/articles/create`. The request method is `POST`. The body contains the following JSON:

```
1 {
2   "title": "Artikel Punya Fida Special Edition",
3   "content": "Ini isi artikel Punya Fida Special Edition",
4   "publicArticle": true,
5   "authorId": "01e3d3e1-c0f9-44e2-9bb3-c3b63e2d557f"
6 }
```

The response is `200 OK` with a `45 ms` latency and `624 B` size. The response body is identical to the request body.

### - Update Article

The screenshot shows a Postman request to `http://localhost:8080/articles/update`. The request method is `POST`. The body contains the following JSON:

```
1 {
2   "id": "8f595a1e-be08-443f-b9e8-743f0bb25925",
3   "title": "Artikel Punya Fida Special Edition Update",
4   "content": "Ini isi artikel Punya Fida Special Edition Update",
5   "publicArticle": true
6 }
```

The response is `200 OK` with a `105 ms` latency and `638 B` size. The response body is identical to the request body.

### - Get All Ascending Article By Create Date

The screenshot shows a Postman request to `http://localhost:8080/articles/getAll/asc`. The request method is `GET`. The headers section shows an Authorization header with a long token.

The response is `200 OK` with a `142 ms` latency and `1.59 KB` size. The response body is a list of articles:

```
1 [
2   {
3     "id": "e1955321-615a-47ab-92e3-c13e2352c465",
4     "title": "Artikel Punya Udin",
5     "content": "Ini isi artikel Punya Udin",
6     "authorId": "01e3d3e1-c0f9-44e2-9bb3-c3b63e2d557f",
7     "createdAt": "2025-11-21 05:51:54",
8     "updatedAt": "2025-11-21 05:51:54"
9   },
10   {
11     "id": "a91b78ae-96c3-46f6-ab21-432c8f7158b1",
12     "title": "Artikel Punya Fida",
13     "content": "Ini isi artikel Punya Fida",
14     "authorId": "6859a194-a312-4596-ac80-a39a6200b261",
15     "createdAt": "2025-11-21 05:55:12",
16     "updatedAt": "2025-11-21 05:55:12"
17   },
18   {
19     "id": "41e3ae07-839f-44e1-8bdb-ec3d920d566c",
20     "title": "Artikel Punya Fida Dapat Minjem",
21     "content": "Ini isi artikel Punya Fida Dapat Minjem",
22     "authorId": "6859a194-a312-4596-ac80-a39a6200b261"
23   }
]
```

## - Get All Descending Article By Create Date

The screenshot shows the Postman interface with a GET request to `http://localhost:8080/articles/getAll/desc`. The Headers tab contains an Authorization header with a long token. The Body tab shows a JSON response with three articles, each having an id, title, content, authorId, createdAt, and updatedAt. The first article is titled "Artikel Punya Fida Special Edition Update". The second is "Artikel Punya Fida Special Edition Part 2". The third is "Artikel Punya Fida Dapat Minjem". All articles were created at 2025-11-21 20:08:01 and updated at 2025-11-21 20:09:37.

```
[{"id": "8f595a1e-be08-443f-b9e8-743f0bb25925", "title": "Artikel Punya Fida Special Edition Update", "content": "ini isi artikel Punya Fida Special Edition Update", "authorId": "60e3d5e1-c0f9-44e2-9ab3-c3b63e2d557f", "createdAt": "2025-11-21 20:08:01", "updatedAt": "2025-11-21 20:09:37"}, {"id": "996c35ad-ac22-499c-bfda-5e0c3fdc2d56", "title": "Artikel Punya Fida Special Edition", "content": "Ini isi artikel Punya Fida Special Edition Part 2", "authorId": "60f9a194-a312-4596-ac0c-439a6200b261", "createdAt": "2025-11-21 08:39:13", "updatedAt": "2025-11-21 15:16:41"}, {"id": "41e3ae07-839f-44e1-8bdb-ec3d928d566c", "title": "Artikel Punya Fida Dapat Minjem", "content": "Ini isi artikel Punya Fida Dapat Minjem", "authorId": "60f9a194-a312-4596-ac0c-439a6200b261", "createdAt": "2025-11-21 08:27:39"}]
```

## - Delete Article using id on url

The screenshot shows the Postman interface with a DELETE request to `http://localhost:8080/articles/delete/8f595a1e-be08-443f-b9e8-743f0bb25925`. The Headers tab shows the same Authorization header. The Body tab indicates no body is present. The response is a 204 No Content status with a 309 B size.

## Users APIs

### - Register User

POST http://localhost:8080/users/register

Body (raw) JSON

```
1 {
2     "username": "usman",
3     "email": "usman@testmail.com",
4     "password": "P@ssw0rd",
5     "fullName": "usmannnnnn"
6 }
```

200 OK

```
1 {
2     "id": "052d0c76-6a92-45b5-9b63-4ae8f6675256",
3     "username": "usman",
4     "email": "usman@testmail.com",
5     "fullName": "usmannnnnn",
6     "role": "VIEWER",
7     "createdAt": "2025-11-21 20:48:17",
8     "updatedAt": "2025-11-21 20:48:17",
9     "lastLogin": null
10 }
```

### - Update User

POST http://localhost:8080/users/update

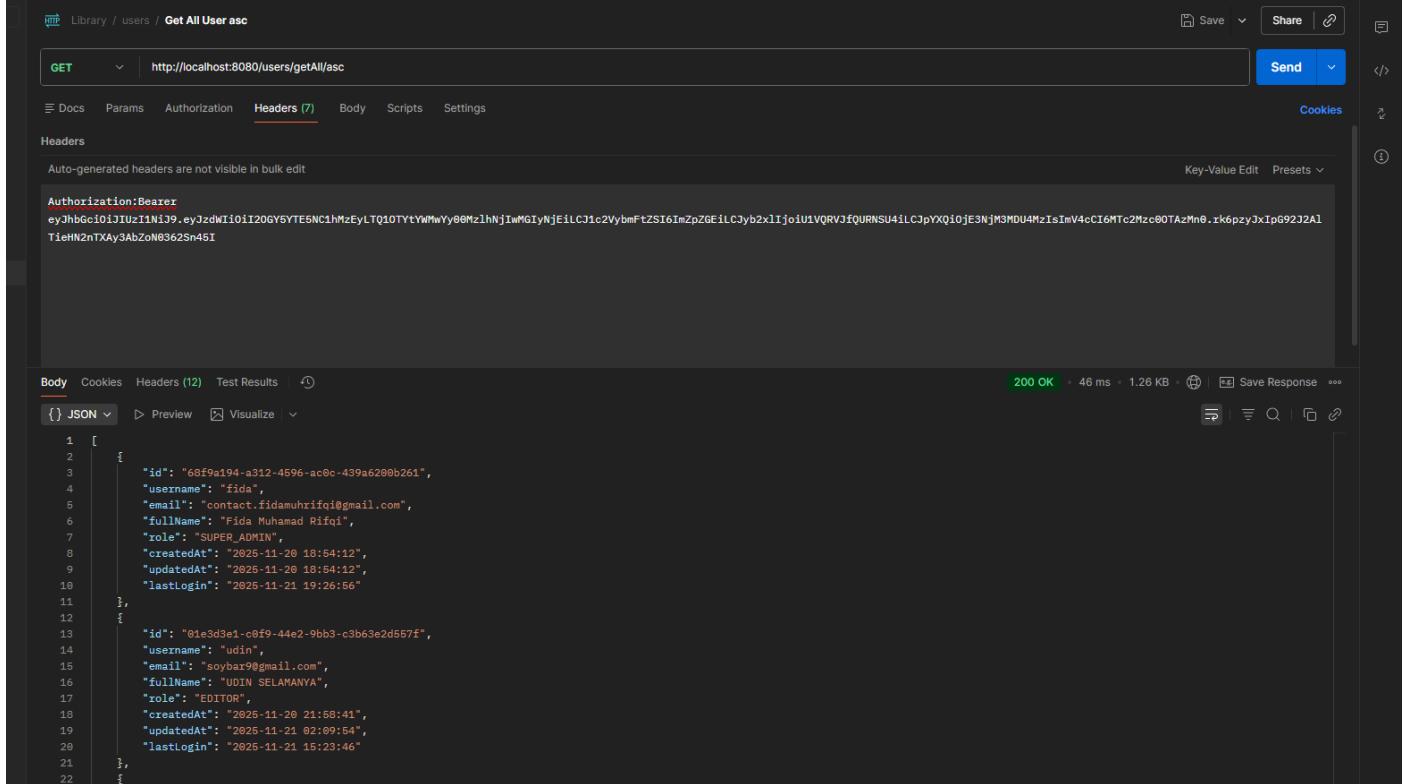
Body (raw) JSON

```
1 {
2     "id": "052d0c76-6a92-45b5-9b63-4ae8f6675256",
3     "username": "usman",
4     "email": "usman@test2mail.com",
5     "fullName": "USMAN PANJANG",
6     "role": "CONTRIBUTOR",
7     "password": "P@ssw0rd"
8 }
```

200 OK

```
1 {
2     "id": "052d0c76-6a92-45b5-9b63-4ae8f6675256",
3     "username": "usman",
4     "email": "usman@test2mail.com",
5     "fullName": "USMAN PANJANG",
6     "role": "CONTRIBUTOR",
7     "createdAt": "2025-11-21 20:48:17",
8     "updatedAt": "2025-11-21 20:50:45",
9     "lastLogin": null
10 }
```

## - Get All Ascending Users By Create Date



Library / users / Get All User asc

GET http://localhost:8080/users/getAll/asc

Headers

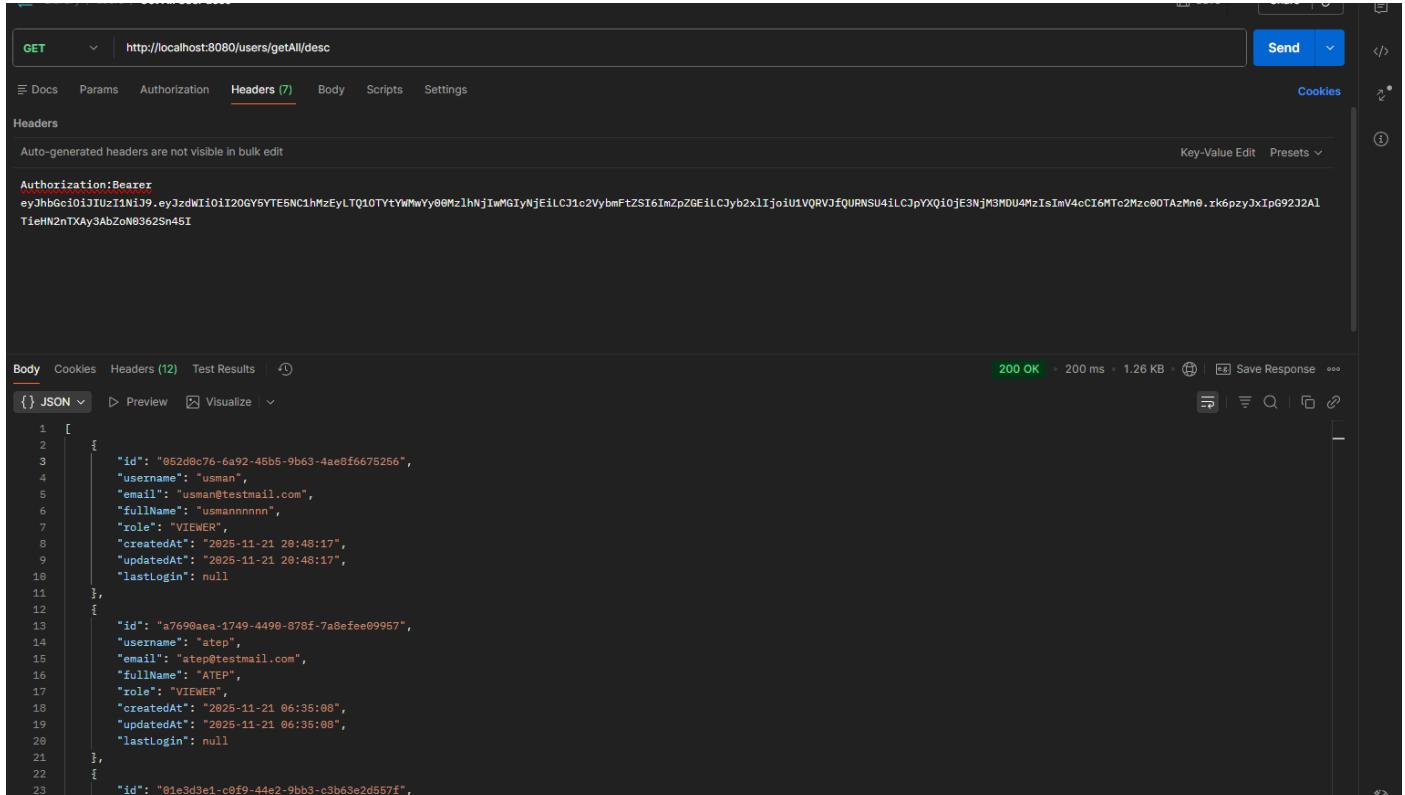
```
Authorization:Bearer eyJhbGciOiJIUzI1NiJ9eyJzdWIiOiI20G5YtE5NC1hMzEyLTQ1OTYtYWMwYy80MzlhNjIwMGIyNjEiLCJic2VybmtZSI6ImZpZGEiLCJyb2xIjoiu1VQRVfQURNSU4iLCJpYXQiOjE3NjM3MDU4MzIsImV4cCI6MTc2Mzc0TAzMn0.rk6pzyJxIpG92J2AlTieHN2nTXAy3AbZoN8362Sn451
```

Body

```
[{"id": "6bf9a194-a312-4596-ac0c-439a6200b261", "username": "fida", "email": "contact.fidanurifqi@gmail.com", "fullName": "Fida Muhamad Rifqi", "role": "SUPER_ADMIN", "createdAt": "2025-11-20 18:54:12", "updatedAt": "2025-11-20 18:54:12", "lastLogin": "2025-11-21 19:26:56"}, {"id": "01e3d3e1-c0f9-44e2-9bb3-c3b63e2d557f", "username": "udin", "email": "sobhar9@gmail.com", "fullName": "UDIN SELAMANYA", "role": "EDITOR", "createdAt": "2025-11-20 21:58:41", "updatedAt": "2025-11-21 02:09:54", "lastLogin": "2025-11-21 16:23:46"}]
```

200 OK

## - Get All Descending Users By Create Date



Library / users / Get All User desc

GET http://localhost:8080/users/getAll/desc

Headers

```
Authorization:Bearer eyJhbGciOiJIUzI1NiJ9eyJzdWIiOiI20G5YtE5NC1hMzEyLTQ1OTYtYWMwYy80MzlhNjIwMGIyNjEiLCJic2VybmtZSI6ImZpZGEiLCJyb2xIjoiu1VQRVfQURNSU4iLCJpYXQiOjE3NjM3MDU4MzIsImV4cCI6MTc2Mzc0TAzMn0.rk6pzyJxIpG92J2AlTieHN2nTXAy3AbZoN8362Sn451
```

Body

```
[{"id": "052d0c76-6a92-45b5-9b63-4ae8f6675256", "username": "usman", "email": "usman@testmail.com", "fullName": "usmannnnn", "role": "VIEWER", "createdAt": "2025-11-21 20:48:17", "updatedAt": "2025-11-21 20:48:17", "lastLogin": null}, {"id": "a7690aea-1749-4490-878f-7a8efee09957", "username": "atep", "email": "atep@testmail.com", "fullName": "ATEP", "role": "VIEWER", "createdAt": "2025-11-21 06:35:08", "updatedAt": "2025-11-21 06:35:08", "lastLogin": null}, {"id": "01e3d3e1-c0f9-44e2-9bb3-c3b63e2d557f", "username": "udin", "email": "sobhar9@gmail.com", "fullName": "UDIN SELAMANYA", "role": "EDITOR", "createdAt": "2025-11-20 21:58:41", "updatedAt": "2025-11-21 02:09:54", "lastLogin": "2025-11-21 16:23:46"}]
```

200 OK

- Delete User using id on url

DELETE | http://localhost:8080/users/delete/052d0c76-6a92-45b5-9b83-4ae8f6675256 | Send

Headers

Auto-generated headers are not visible in bulk edit

Authorization: Bearer eyJhbGciOiJIUzI1NiJ9.eyJzdWIiOiI20GY5YTE5NC1hMzEyLTQ1OTYtYWMy00MzlhNjIwMGiyNjEiLCJ1c2VybmtZSI6ImZpZGEiLCJybxlijoiu1VQRVJfQURNSU4iLCJpYXQiOjE3NjM3MDU4MzIsImV4cCI6MTc2Mzc0OTAzMn0.zk6pzyJxIpG92J2AlTieHN2nTXAy3AbZo0362Sn451

Body Cookies Headers (10) Test Results

Raw Preview Visualize

204 No Content | 90 ms | 309 B | Save Response

## Audit Log APIs

- Get All Ascending Audit Log By Create Date

GET | http://localhost:8080/audit/logs/asc | Send

Headers

Auto-generated headers are not visible in bulk edit

Authorization: Bearer eyJhbGciOiJIUzI1NiJ9.eyJzdWIiOiI20GY5YTE5NC1hMzEyLTQ1OTYtYWMy00MzlhNjIwMGiyNjEiLCJ1c2VybmtZSI6ImZpZGEiLCJybxlijoiu1VQRVJfQURNSU4iLCJpYXQiOjE3NjM3MDU4MzIsImV4cCI6MTc2Mzc0OTAzMn0.zk6pzyJxIpG92J2AlTieHN2nTXAy3AbZo0362Sn451

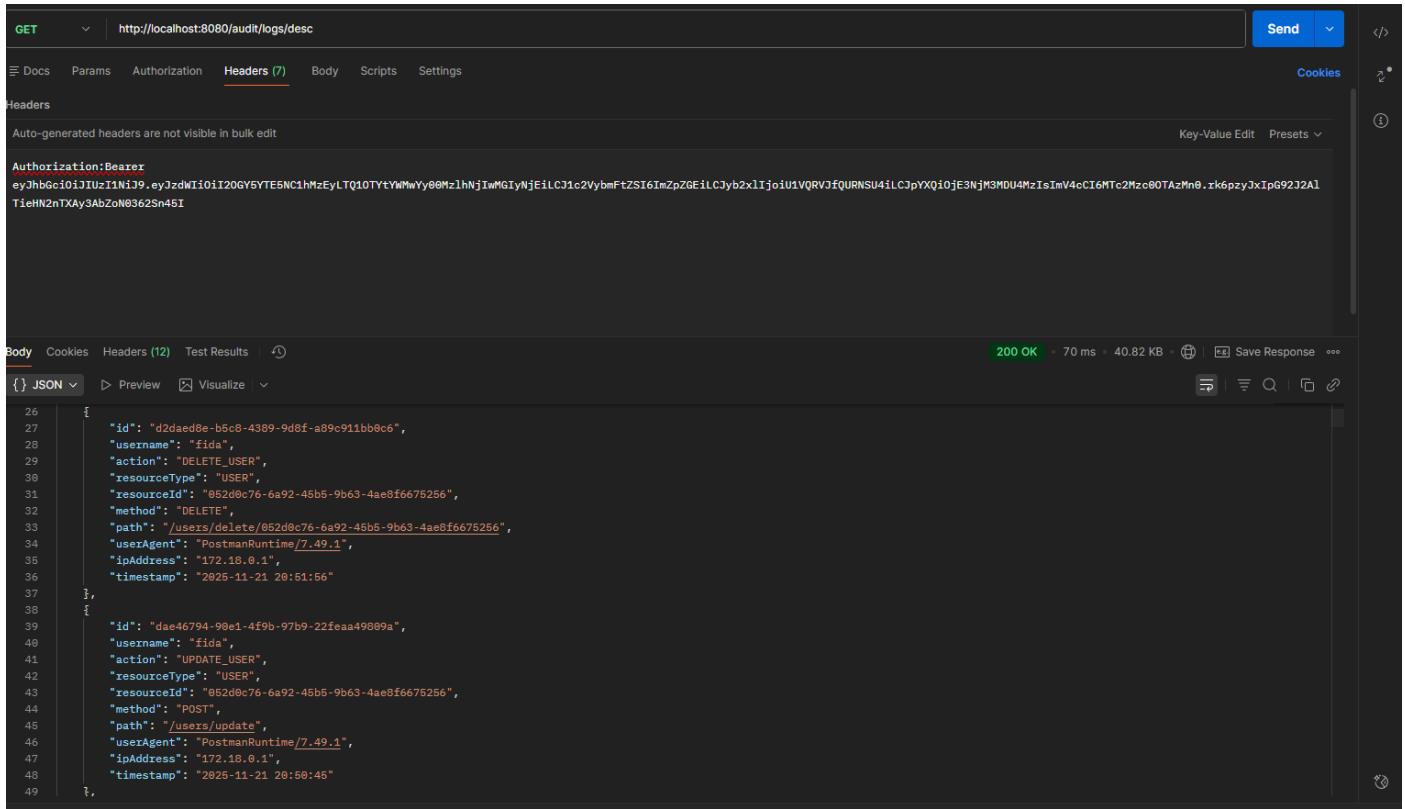
Body Cookies Headers (12) Test Results

{ } JSON Preview Visualize

200 OK | 117 ms | 40.55 KB | Save Response

```
[{"id": "a4e9f2b-b3f1-4848-a36b-7ebde7a8f5a1", "username": "anonymousUser", "action": "LOGIN_SUCCESS", "resourceType": "AUTH", "resourceId": "01e3d3e1-c0f9-44e2-9bb3-c3b63e2d657f", "method": "POST", "path": "/users/login", "userAgent": "PostmanRuntime/7.49.1", "ipAddress": "0:0:0:0:0:0:0:1", "timestamp": "2025-11-21 02:07:07"}, {"id": "a7ef9205-d800-47da-859c-1a92ef5b536f", "username": "udin", "action": "GET_ALL_ARTICLE", "resourceType": "ARTICLE", "resourceId": "ALL", "method": "GET", "path": "/articles/getAll/asc", "userAgent": "PostmanRuntime/7.49.1", "ipAddress": "0:0:0:0:0:0:0:1", "timestamp": "2025-11-21 02:07:54"}]
```

## - Get All Descending Audit Log By Create Date



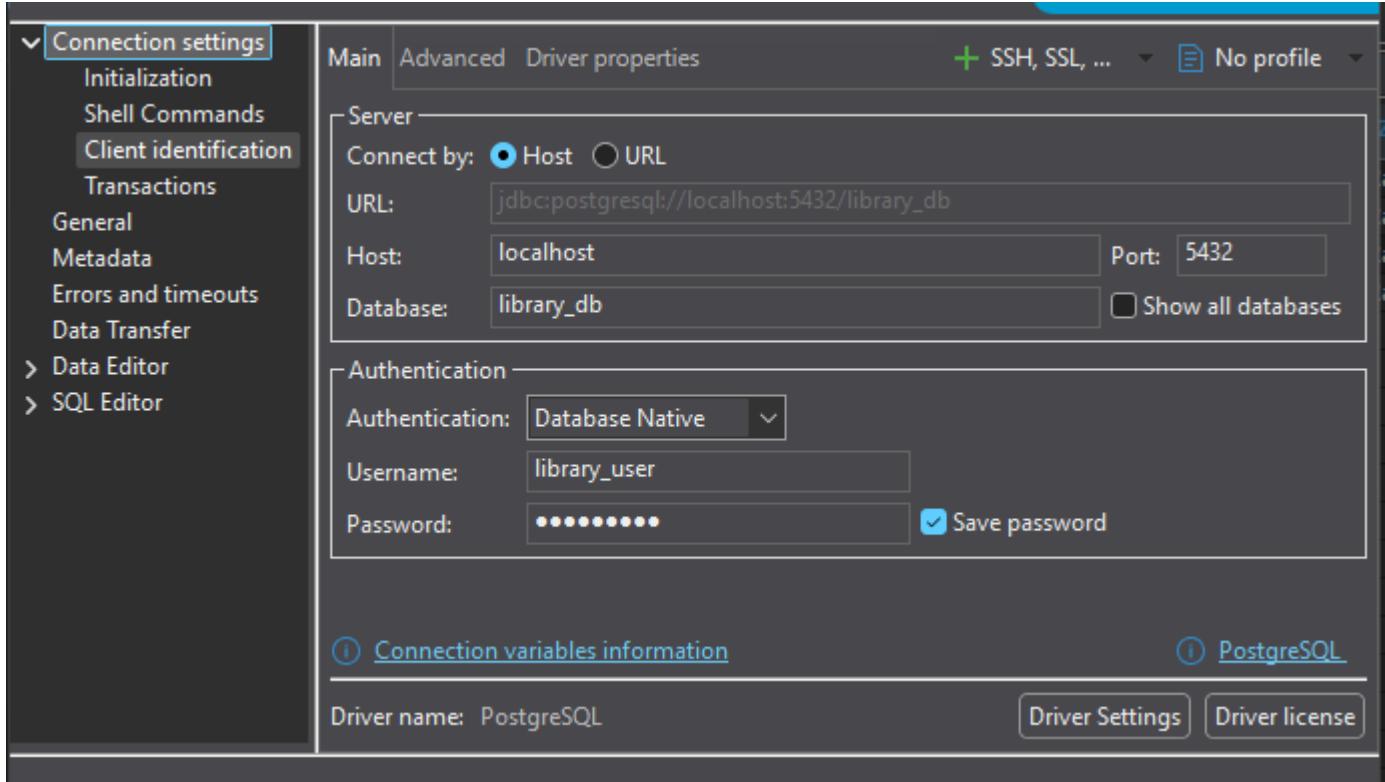
```

GET http://localhost:8080/audit/logs/desc
Headers (7)
Body
200 OK 70 ms 40.82 KB
26 [
27   {
28     "id": "d2daed8e-b5e8-4389-9d8f-a89c91bb0c6",
29     "username": "fida",
30     "action": "DELETE_USER",
31     "resourceType": "USER",
32     "resourceId": "062d0c76-6a92-45b5-9b63-4ae8f6675256",
33     "method": "DELETE",
34     "path": "/users/delete/062d0c76-6a92-45b5-9b63-4ae8f6675256",
35     "userAgent": "PostmanRuntime/7.49.1",
36     "ipAddress": "172.18.0.1",
37     "timestamp": "2025-11-21 20:51:56"
38   },
39   {
40     "id": "dae46794-90e1-4f9b-97b9-22feaa49009a",
41     "username": "fida",
42     "action": "UPDATE_USER",
43     "resourceType": "USER",
44     "resourceId": "062d0c76-6a92-45b5-9b63-4ae8f6675256",
45     "method": "POST",
46     "path": "/users/update",
47     "userAgent": "PostmanRuntime/7.49.1",
48     "ipAddress": "172.18.0.1",
49     "timestamp": "2025-11-21 20:50:46"
50   }
],

```

## Database Documentation

Password = FidaAdmin



**Connection settings**

- Initialization
- Shell Commands
- Client identification**
- Transactions
- General
- Metadata
- Errors and timeouts
- Data Transfer
- > Data Editor
- > SQL Editor

**Main** Advanced Driver properties **SSH, SSL, ...** **No profile**

**Server**

Connect by:  Host  URL

URL: jdbc:postgresql://localhost:5432/library\_db

Host: localhost Port: 5432

Database: library\_db  Show all databases

**Authentication**

Authentication: Database Native

Username: library\_user

Password: \*\*\*\*\*  Save password

[Connection variables information](#) [PostgreSQL](#)

Driver name: PostgreSQL [Driver Settings](#) [Driver license](#)

## Article Table

**Properties** **Data** **Diagram**

Table Name: article Tablespace: pg\_default Owner: library\_user

Comment: Extra Options:

Partition by: Object ID: 16389

Column Name	#	Data type	Identity	Collation	Not Null	Default	Comment
AZ_id	1	varchar(255)		default	[v]		
AZ_title	2	varchar(255)		default	[v]		
AZ_content	3	varchar(255)		default	[ ]		
AZ_author_id	4	varchar(255)		default	[ ]		
created_at	5	timestamp			[ ]		
updated_at	6	timestamp			[ ]		
is_public	7	bool			[ ]	true	

<library\_db> Script public article users audit\_logs

**Properties** **Data** **Diagram**

Show SQL Enter a SQL expression to filter results (use Ctrl+Space)

Grid	AZ_id	AZ_title	AZ_content	AZ_author_id	created_at	updated_at	is_public
1	e1955321-615a-47ab-92e3-c13e2352c465	Artikel Punya Udin	Ini isi artikel Punya Udin	01e3d9e1-c0f9-44e2-9bb3-c3b63e2d557f	2025-11-20 22:51:54.107	2025-11-20 22:51:54.107	[ ]
2	a91b78ae-96c3-4ff6-ab21-432c8f7158b1	Artikel Punya Fida	Ini isi artikel Punya Fida	68f9a194-a312-4596-ac0c-439a6200b261	2025-11-20 22:55:12.127	2025-11-20 22:55:12.127	[ ]
3	41e3ae07-839f-44e1-8bdb-e3d920d566c	Artikel Punya Fida Dapat Minjem	Ini isi artikel Punya Fida Dapat Minjem	68f9a194-a312-4596-ac0c-439a6200b261	2025-11-21 01:27:19.939	2025-11-21 01:27:19.939	[ ]
4	896c35ad-ac22-499c-bfda-5c0c3fdc2d56	Artikel Punya Fida Special Edition	Ini isi artikel Punya Fida Special Edition Part 2	68f9a194-a312-4596-ac0c-439a6200b261	2025-11-21 01:39:13.356	2025-11-21 08:16:41.974	[v]

## User Table

<library\_db> Script public article users audit\_logs

**Properties** **Data** **Diagram**

Table Name: users Tablespace: pg\_default Owner: library\_user

Comment: Extra Options:

Partition by: Object ID: 16396

Column Name	#	Data type	Identity	Collation	Not Null	Default	Comment
AZ_id	1	varchar(255)		default	[v]		
AZ_username	2	varchar(255)		default	[v]		
AZ_email	3	varchar(255)		default	[v]		
AZ_password	4	varchar(255)		default	[v]		
AZ_full_name	5	varchar(255)		default	[ ]		
AZ_role	6	varchar(255)		default	[ ]		
created_at	7	timestamp			[ ]		
updated_at	8	timestamp			[ ]		
last_login	9	timestamp			[ ]		
account_login	10	timestamp(6)			[ ]		
failed_login	11	int4			[ ]		
last_failed_login	12	timestamp(6)			[ ]		
otp_code	13	varchar(255)		default	[ ]		
otp_expired	14	timestamp(6)			[ ]		

Properties Data Diagram

Show SQL Enter a SQL expression to filter results (use Ctrl+Space)

AZ_id	AZ_username	AZ_email	AZ_password	AZ_full_name	AZ_role	created_at	
1	a7690aea-1749-4490-878f-7a8feee09957	atep	atep@testmail.com	\$2a\$10\$diQDNxd7Q9w/GvCl5Z2OVk6ca.bYGOQA19UtcLyzew3dsElvu	ATEP	2025-11-20 23:35:08.117	
2	01e3d3e1-c0f9-44e2-9bb3-c3b63e2d557f	udin	soybar@gmail.com	\$2a\$10\$GNvxwDg0INBWtZj/i05Cau3U9g1pf9Ec087OxkCzVi3u3RctjZ6	UDIN SELAMANYA	2025-11-20 14:58:41.207	
3	68f9a194-a312-4596-ac0c-439a6200b261	fida	contact.fidamuhriqi@gn	\$2a\$10\$tpEKRG6t87YyBlsPhaOF.Cjfye8nibvgm4pu/g2KSXy0dS2drxO	Fida Muhamad Rifqi	SUPER_ADMIN	2025-11-20 11:54:12.022

## Audit Log Table

Properties Data Diagram

Table Name: audit\_logs Tablespace: pg\_default Owner: library\_user

Comment: Extra Options:

Partition by: Object ID: 16416

Columns

Column Name	Data type	Identity	Collation	Not Null	Default	Comment
AZ_id	varchar(255)		default	[v]		
AZ_username	varchar(255)		default	[]		
AZ_action	varchar(255)		default	[]		
AZ_resource_ty	varchar(255)		default	[]		
AZ_resource_id	varchar(255)		default	[]		
AZ_method	varchar(255)		default	[]		
AZ_path	varchar(255)		default	[]		
AZ_user_agent	varchar(255)		default	[]		
AZ_ip_address	varchar(255)		default	[]		
timestamp	timestamp			[]		

Properties Data Diagram

Show SQL Enter a SQL expression to filter results (use Ctrl+Space)

AZ_id	AZ_username	AZ_action	AZ_resource_type	AZ_resource_id	AZ_method	AZ_path	AZ_user_agent
1	ae40f2b-3f1-4848-a36b-7ebde7a8f5a1	anonymousUser	LOGIN_SUCCESS	AUTH	01e3d3e1-c0f9-44e2-9bb3-c3b63e2d557f	POST	/users/login PostmanRuntime/7.49.1
2	a7ef9205-d800-47da-859c-1a92e50536f	udin	GET_ALL_ARTICLE	ARTICLE	ALL	GET	/articles/getAll/asc PostmanRuntime/7.49.1
3	f752d4da-8b1f-45b6-9abe-245d5f7539b	fida	UPDATE_USER	USER	01e3d3e1-c0f9-44e2-9bb3-c3b63e2d557f	POST	/users/update PostmanRuntime/7.49.1
4	f7ebff1-21bf-4071-870d-6a1e5d1609f	fida	GET_ALL_AUDIT_LOG	AUDIT	ALL	GET	/audit/logs PostmanRuntime/7.49.1
5	946f1a27-3601-4e53-9897-51e21557cdc	anonymousUser	LOGIN_SUCCESS	AUTH	68f9a194-a312-4596-ac0c-439a6200b261	POST	/users/login PostmanRuntime/7.49.1
6	335c24e3-5b4b-4251-a69b-df23eb1b359f	fida	GET_ALL_AUDIT_LOG	AUDIT	ALL	GET	/audit/logs PostmanRuntime/7.49.1
7	fe924f02-2173-4cd8-bf82-3543b29e564	fida	LOGIN_FAILED	AUTH	[NULL]	POST	/users/login PostmanRuntime/7.49.1
8	67973d0-6952-4e35-90e0-b2574d313a9	fida	GET_ALL_AUDIT_LOG	AUDIT	ALL	GET	/audit/logs PostmanRuntime/7.49.1
9	97909768-cd43-a31-873f-6d249c53e733	fida	GET_ALL_AUDIT_LOG	AUDIT	ALL	GET	/audit/logs PostmanRuntime/7.49.1
10	4241b604-3461-419f-a677-4ac0b88e0487	fida	LOGIN_FAILED	AUTH	[NULL]	POST	/users/login PostmanRuntime/7.49.1
11	d05cd721-4eba-4766-ba0f-a31211f479	fida	GET_ALL_AUDIT_LOG	AUDIT	ALL	GET	/audit/logs PostmanRuntime/7.49.1
12	92dd6b73-34e4-4f94-88d-773dec13ed	fida	LOGIN_FAILED	AUTH	[NULL]	POST	/users/login PostmanRuntime/7.49.1
13	abfc25e3-31d5-408b-90e-1373417d05	anonymousUser	LOGIN_SUCCESS	AUTH	68f9a194-a312-4596-ac0c-439a6200b261	POST	/users/login PostmanRuntime/7.49.1
14	fcaba7d-6ea2-4f6b-a4f0-7c8fc9421d5	fida	GET_ALL_AUDIT_LOG	AUDIT	ALL	GET	/audit/logs PostmanRuntime/7.49.1
15	b91df9b-8598-4e5b-a75e-a133afcd3f3e	anonymousUser	LOGIN_SUCCESS	AUTH	68f9a194-a312-4596-ac0c-439a6200b261	POST	/users/login PostmanRuntime/7.49.1
16	4f409912-9dd6-40dd-a0e1-8caf2ed9b16	fida	GET_ALL_AUDIT_LOG	AUDIT	ALL	GET	/audit/logs/desc PostmanRuntime/7.49.1
17	c790b9b4-fab-47c1-913f-d24bf86c75	anonymousUser	LOGIN_SUCCESS	AUTH	68f9a194-a312-4596-ac0c-439a6200b261	POST	/users/login PostmanRuntime/7.49.1
18	2748fae2-60ef-4f43-a408-d87a931c79ed	anonymousUser	LOGIN_SUCCESS	AUTH	68f9a194-a312-4596-ac0c-439a6200b261	POST	/users/login PostmanRuntime/7.49.1
19	ec2635d0-853d-4e63-b57c-fdfba98456	fida	GET_ALL_AUDIT_LOG	AUDIT	ALL	GET	/audit/logs/asc PostmanRuntime/7.49.1
20	5a5d64ba-14be-4f87-b737-bb833219c2b2	fida	GET_ALL_AUDIT_LOG	AUDIT	ALL	GET	/audit/logs/desc PostmanRuntime/7.49.1
21	9b0c4831-bfd3-4e6d-8ce1-38063f19fb34	anonymousUser	OTP_SENT	AUTH	68f9a194-a312-4596-ac0c-439a6200b261	POST	/users/login PostmanRuntime/7.49.1
22	ca962a7-b3fa-41cd-8a1d-cb7e381363	anonymousUser	LOGIN_OTP_FAILED	AUTH	68f9a194-a312-4596-ac0c-439a6200b261	POST	/users/verify-otp PostmanRuntime/7.49.1
23	83a05709-06b1-4d6c-8a77-a893b6db863	anonymousUser	LOGIN_OTP_FAILED	AUTH	68f9a194-a312-4596-ac0c-439a6200b261	POST	/users/verify-otp PostmanRuntime/7.49.1
24	08f4fc07-baa6-4d83-80d8-93f2e8931c	anonymousUser	LOGIN_OTP_FAILED	AUTH	68f9a194-a312-4596-ac0c-439a6200b261	POST	/users/verify-otp PostmanRuntime/7.49.1
25	91e5b72a-d9f2-4205-9079-8438a77fc8f	anonymousUser	LOGIN_OTP_FAILED	AUTH	68f9a194-a312-4596-ac0c-439a6200b261	POST	/users/verify-otp PostmanRuntime/7.49.1
26	8d0cb7d9-377b-4659-b450-89dceb6db1a	anonymousUser	LOGIN_SUCCESS	AUTH	68f9a194-a312-4596-ac0c-439a6200b261	POST	/users/verify-otp PostmanRuntime/7.49.1
27	7e9eca64-04af-42ec-9dc5-151f87dbf81a	udin	LOGIN_FAILED	AUTH	[NULL]	POST	/users/login PostmanRuntime/7.49.1

Properties Data Diagram

Show SQL Enter a SQL expression to filter results (use Ctrl+Space)

username	AZ_action	AZ_resource_type	AZ_resource_id	AZ_method	AZ_path	AZ_user_agent	AZ_ip_address	timestamp
	GET_ALL_USER	USER	ALL	GET	/users/getAll/desc	PostmanRuntime/7.49.1	0:0:0:0:0:0:1	2025-11-20 23:46:07.661
	GET_ALL_USER	USER	ALL	GET	/users/getAll/desc	PostmanRuntime/7.49.1	0:0:0:0:0:0:1	2025-11-20 23:46:17.768
	GET_ALL_USER	USER	ALL	GET	/users/getAll/desc	PostmanRuntime/7.49.1	0:0:0:0:0:0:1	2025-11-21 00:22:35.947
	GET_ALL_USER	USER	ALL	GET	/users/getAll/desc	PostmanRuntime/7.49.1	0:0:0:0:0:0:1	2025-11-21 00:43:56.839
mousUser	OTP_SENT	AUTH	68f9a194-a312-4596-ac0c-439a6200b261	POST	/users/login	Mozilla/5.0 (Windows NT 0:0:0:0:0:0:1	0:0:0:0:0:0:1	2025-11-21 00:45:53.152
mousUser	LOGIN_SUCCESS	AUTH	68f9a194-a312-4596-ac0c-439a6200b261	POST	/users/verify-otp	Mozilla/5.0 (Windows NT 0:0:0:0:0:0:1	0:0:0:0:0:0:1	2025-11-21 00:46:31.608
	GET_ALL_USER	USER	ALL	GET	/users/getAll/desc	PostmanRuntime/7.49.1	0:0:0:0:0:0:1	2025-11-21 00:47:51.815
	GET_ALL_USER	USER	ALL	GET	/users/getAll/desc	PostmanRuntime/7.49.1	0:0:0:0:0:0:1	2025-11-21 00:49:49.252
	GET_ALL_USER	USER	ALL	GET	/users/getAll/desc	PostmanRuntime/7.49.1	0:0:0:0:0:0:1	2025-11-21 01:03:22.787
	GET_ALL_USER	USER	ALL	GET	/users/getAll/desc	PostmanRuntime/7.49.1	0:0:0:0:0:0:1	2025-11-21 01:11:43.171
	CREATE_ARTICLE	ARTICLE	41e3ae07-839f-44e1-8bdb-ec3d920d566c	POST	/articles/create	PostmanRuntime/7.49.1	0:0:0:0:0:0:1	2025-11-21 01:27:19.979
	CREATE_ARTICLE	ARTICLE	c34a2e67-61e6-4024-9176-c392f28931c	POST	/articles/create	PostmanRuntime/7.49.1	0:0:0:0:0:0:1	2025-11-21 01:28:48.586
	CREATE_ARTICLE	ARTICLE	51c2ab7f-277d-4c6d-9bdf-aef270422878d	POST	/articles/create	PostmanRuntime/7.49.1	0:0:0:0:0:0:1	2025-11-21 01:29:38.723
	CREATE_ARTICLE	ARTICLE	15265d7b-9a02-43a5-ac3c-518d67c42e0f	POST	/articles/create	PostmanRuntime/7.49.1	0:0:0:0:0:0:1	2025-11-21 01:31:38.085

# Redis Documentation

### Edit Connection

\* Host: localhost

\* Port: 6379

Password: Auth

Username: ACL in Redis >= 6.0

Connection Name: localhost@6379

Separator: :

SSH    SSL    Sentinel ?    Cluster ?    Readonly ?

## Redis for Api Limiter

The screenshot shows the Redis command-line interface (CLI) with the connection set to 'localhost@6379'. A key named 'rateUSER\_fida' is selected, and its value is displayed as '59'. The interface includes a search bar and various Redis command buttons.

## Redis for caching APIs GET and destroyed after 5 minutes or data changed by APIs POST/DELETE

The screenshot shows the Redis CLI with the connection set to 'localhost@6379'. A key named 'articles:all\_asc' is selected and displayed in JSON format. The data contains two articles, each with fields like id, title, content, authorId, and timestamps for creation and update. The interface includes a search bar and various Redis command buttons.

```

1 package com.library.libraryService.config;
2
3 > import ...
10
11 @Configuration
12 < public class CacheConfig {
13
14     @Bean
15     public RedisCacheConfiguration redisCacheConfiguration() {
16         return RedisCacheConfiguration
17             .defaultCacheConfig()
18             .entryTtl(Duration.ofMinutes(5))
19             .serializeKeysWith(
20                 RedisSerializationContext.SerializationPair
21                     .fromSerializer(org.springframework.data.redis.serializer.StringRedisSerializer.UTF_8))
22             .serializeValuesWith(
23                 RedisSerializationContext.SerializationPair
24                     .fromSerializer(new GenericJackson2JsonRedisSerializer()))
25     );
26 }
27

```

## Example Reddis Destroyed after create new article

The screenshot shows the Redis UI interface. On the left, there's a sidebar with a dropdown for 'DB0' and a button '+ New Key'. Below it is a search bar 'Enter To Search'. Under the search bar, there's a section for 'rate' with one entry: 'rate:USER\_fida'. The main area is divided into four panels: 'Server' (Redis Version: 7.4.7, OS: Linux6.6.87.2-microsoft-standard-WSL2x86\_64, Process ID: 1), 'Memory' (Used Memory: 1.21MB, Used Memory Peak: 1.21MB, Used Memory Lua: 32KB), and 'Stats' (Connected Clients: 2, Total Connections: 2, Total Commands: 61).

## Unit Test Documentation

The screenshot shows the SonarQube coverage report for the 'libraryService' project. On the left, there's a tree view of the project structure, including 'src/main/java' (84% classes, 95% lines covered) and 'src/test/java' (selected). The right side shows a detailed coverage report for 'com.library.libraryService' and its sub-packages. The report includes columns for 'Element', 'Class, %', 'Method, %', 'Line, %', and 'Branch, %'. The data is as follows:

Element	Class, %	Method, %	Line, %	Branch, %
com.library.libraryService	84% (21/25)	93% (85/91)	95% (491/513)	80% (141/175)
article	100% (3/3)	100% (18/18)	100% (97/97)	81% (40/49)
audit	100% (3/3)	100% (10/10)	98% (72/73)	78% (22/28)
common	100% (3/3)	100% (10/10)	100% (56/56)	100% (2/2)
config	33% (1/3)	50% (1/2)	70% (14/20)	100% (4/4)
security	83% (5/6)	85% (18/21)	87% (91/104)	80% (29/36)
user	100% (6/6)	96% (28/29)	99% (161/162)	78% (44/56)
LibraryServiceApplication	0% (0/1)	0% (0/1)	0% (0/1)	100% (0/0)

# Architecture Documentation

## Layered Architecture And Dao + Implementation

The screenshot shows the VS Code interface with the project 'libraryService' open. The left sidebar displays the project structure under the 'Project' tab:

- java
  - com.library.libraryService
    - article
      - controller
      - dao
      - dto
      - entity
      - repository
      - service
    - audit
      - controller
      - dao
      - dto
      - entity
      - repository
      - service
    - common
      - dto
      - handler
      - mail
    - config
      - CacheConfig
      - DataInitializer
      - OpenApiConfig
    - security
      - jwt
      - ratelimit
      - SecurityConfig
    - user
      - controller
      - dao
      - dto
      - entity
      - exception
      - repository
      - service
    - LibraryServiceApplication
  - resources

On the right side of the interface, there is a vertical toolbar with several icons: a refresh icon, a file icon, a search icon, a recent files icon, a help icon, and a settings icon. Below the toolbar, there are several keyboard shortcut hints:

  - Search Everywhere Double Shift
  - Go to File Ctrl+Shift+N
  - Recent Files Ctrl+E
  - Navigation Bar Alt+Home
  - Drop files here to open them

# Error Handling Documentation

## Parameter validation

- Path Variable Blank

The screenshot shows a Postman request for `http://localhost:8080/articles/getAll/`. The Headers tab shows an Authorization header with a long token. The Body tab is set to raw JSON, containing:

```
1 {  
2     "message": "Path variable tidak valid",  
3     "errors": {  
4         "sortType": "sortType tidak boleh kosong"  
5     }  
6 }
```

The response status is 400 Bad Request, with a message indicating the path variable is invalid.

- Wrong Format Email

The screenshot shows a Postman request for `http://localhost:8080/users/register`. The Headers tab shows an Authorization header with a long token. The Body tab is set to raw JSON, containing:

```
1 {  
2     "username": "usman",  
3     "email": "usmanbukaeamil",  
4     "password": "P@ssw0rd",  
5     "fullName": "usmannnnnn"  
6 }
```

The response status is 400 Bad Request, with a message indicating the payload is invalid and specifically mentioning the email format is incorrect.

- Mandatory Field Null

The screenshot shows a Postman request for `http://localhost:8080/users/register`. The Headers tab shows an Authorization header with a long token. The Body tab is set to raw JSON, containing:

```
1 {  
2     // "username": "usman",  
3     // "email": "usmantest@mail.com",  
4     // "password": "P@ssw0rd",  
5     // "fullName": "usmannnnnn"  
6 }
```

The response status is 400 Bad Request, with a message indicating the payload is invalid and specifically mentioning the username field must be filled.

## - Mandatory Field Empty

The screenshot shows a POST request to `http://localhost:8080/users/register`. The request body is a JSON object with fields: `"username": "", "email": "usman@testmail.com", "password": "P@ssw0rd", "fullName": "usmannnnnn"`. The response status is **400 Bad Request**, and the response body is a JSON object with a message and an error object: `{"message": "Payload tidak valid", "errors": {"username": "username tidak boleh kosong"}}`.

## Wrong Password Handling

The screenshot shows a POST request to `http://localhost:8080/users/login`. The request body is a JSON object with fields: `"username": "udin", "password": "P@ssw0rd"`. The response status is **401 Unauthorized**, and the response body is a JSON object with a status, error, message, path, and timestamp: `{"status": 401, "error": "INVALID_CREDENTIALS", "message": "password salah", "path": "/users/login", "timestamp": "Fri Nov 21 15:24:09 UTC 2025"}`.

## Account Lock Handling

The screenshot shows a POST request to `http://localhost:8080/users/login`. The request body is a JSON object with fields: `"username": "udin", "password": "P@ssw0rd"`. The response status is **423 Locked (WebDAV) (RFC 4918)**, and the response body is a JSON object with a status, error, message, path, and timestamp: `{"status": 423, "error": "ACCOUNT_LOCKED", "message": "Akun terikunci. Coba lagi dalam 29 menit.", "path": "/users/login", "timestamp": "Fri Nov 21 15:24:29 UTC 2025"}`.

## Rate Limiter Error Handling

A screenshot of a database management tool. The left sidebar shows a tree view of databases and tables. A table named 'rate:USER\_fida' is selected. The main pane displays a single row with the value '60'. At the top, there are tabs for 'String' and 'rate:USER\_fida', and a TTL field set to 49.

A screenshot of the POSTMAN application. A GET request is made to `http://localhost:8080/articles/getAll/asc`. The Headers tab shows an Authorization header with a Bearer token. The Body tab shows a JSON response with a status of 429 and a message in Indonesian: "Terlalu banyak request. Coba lagi beberapa saat.". The status bar at the bottom indicates a 429 Too Many Requests error.

## Runtime Error Handling

ex : Data Not Found

A screenshot of the POSTMAN application. A DELETE request is made to `http://localhost:8080/articles/delete/12312123123`. The Headers tab shows a Content-Type of 'none'. The Body tab is empty. The status bar at the bottom indicates a 500 Internal Server Error.

## ex: UserName And Email Already Taken On Registered User

The screenshot shows a POST request to `http://localhost:8080/users/register`. The request body contains:

```
1 {  
2   "username": "udin",  
3   "email": "usman@testmail.com",  
4   "password": "P@ssw0rd",  
5   "fullName": "usmannaNNNN"  
6 }
```

The response status is 500 Internal Server Error, with a timestamp of Fri Nov 21 15:30:04 UTC 2025. The response body is:

```
1 {  
2   "path": "/users/register",  
3   "error": "Internal Server Error",  
4   "message": "Username already taken",  
5   "timestamp": "Fri Nov 21 15:30:04 UTC 2025",  
6   "status": 500  
7 }
```

The screenshot shows a POST request to `http://localhost:8080/users/register`. The request body contains:

```
1 {  
2   "username": "usman",  
3   "email": "soybar@gmail.com",  
4   "password": "P@ssw0rd",  
5   "fullName": "usmannaNNNN"  
6 }
```

The response status is 500 Internal Server Error, with a timestamp of Fri Nov 21 15:30:48 UTC 2025. The response body is:

```
1 {  
2   "path": "/users/register",  
3   "error": "Internal Server Error",  
4   "message": "Email already registered",  
5   "timestamp": "Fri Nov 21 15:30:48 UTC 2025",  
6   "status": 500  
7 }
```

## ex: wrong format sorting

The screenshot shows a GET request to `http://localhost:8080/articles/getAll/aaaaaa`. The request header `Authorization: Bearer` is present with a long token.

The response status is 500 Internal Server Error, with a timestamp of Sat Nov 22 06:47:14 UTC 2025. The response body is:

```
1 {  
2   "path": "/articles/getAll/aaaaaa",  
3   "error": "Internal Server Error",  
4   "message": "Format Sorting Salah",  
5   "timestamp": "Sat Nov 22 06:47:14 UTC 2025",  
6   "status": 500  
7 }
```

## Error Handling An unauthorized role attempted to access certain APIs.

ex : udin with Editor role trying to access Audit Log APIs

Grid	AZ - id	AZ username	AZ email	AZ password	AZ full_name	AZ role	AZ created_at	Panels
1	01e3d3e1-c0f9-44e2-9bb3-c3b63e2d557f	udin	soybar9@gmail.com	\$2a\$10\$GNvxxDgoIN8WTZJ/i05Cau3U9g1pf9EoB7OxKczVi3u3RCtjZ6.	UDIN SELAMANYA	EDITOR	2025-11-20 14:58:41.207	

POST http://localhost:8080/users/verify-otp

Body

```
1 {
2   "username": "udin",
3   "otp": "775285"
4 }
```

Headers (11) Test Results (1/1)

200 OK · 34 ms · 655 B · Save Response

Body Cookies Headers (11) Test Results (1/1)

```
1 {
2   "userId": "01e3d3e1-c0f9-44e2-9bb3-c3b63e2d557f",
3   "username": "udin",
4   "message": "Login success",
5   "token": "eyJhbGciOiJIUzI1NiJ9.eyJzdWIiOiIwMWUzZDN1MS1jMGY5LTQ0ZTItOWJiMy1jM2I2M2UyZDU1N2YiLCJic2VybmtZSI6InVkaW4iLCJyb2xljo1RURJVE9SIIiwiwF0IjoxNzNjkwLCJleHAIoJE3NjM3ODA40TB9.NSos5mWhDn56@rvaoyYKJLIFP9U4AKHyhLhw-1t2eQ"
6 }
```

GET http://localhost:8080/audit/logs/desc

Headers

Auto-generated headers are not visible in bulk edit

Authorization: Bearer eyJhbGciOiJIUzI1NiJ9.eyJzdWIiOiIwMWUzZDN1MS1jMGY5LTQ0ZTItOWJiMy1jM2I2M2UyZDU1N2YiLCJic2VybmtZSI6InVkaW4iLCJyb2xljo1RURJVE9SIIiwiwF0IjoxNzNjkwLCJleHAIoJE3NjM3ODA40TB9.NSos5mWhDn56@rvaoyYKJLIFP9U4AKHyhLhw-1t2eQ

Body Cookies Headers (12) Test Results

403 Forbidden · 61 ms · 549 B · Save Response

```
1 {
2   "status": 403,
3   "error": "FORBIDDEN",
4   "message": "Anda tidak memiliki izin untuk mengakses service ini.",
5   "path": "/audit/logs/desc",
6   "timestamp": "Fri Nov 21 15:32:03 UTC 2025"
7 }
```