Technical documentation

Swagger

For the API documentation, Swagger is used. By navigating to http://localhost:8080/swagger-ui/index.html#/, you can view all available endpoints, including their expected input and returned responses.If you see a lock icon next to an endpoint, it means the endpoint is secured and requires authentication. Swagger also allows you to test endpoints directly. Simply expand an endpoint, click **“Try it out”**, fill in the necessary data if applicable, and then click **“Execute”** to send the request.

Authentication

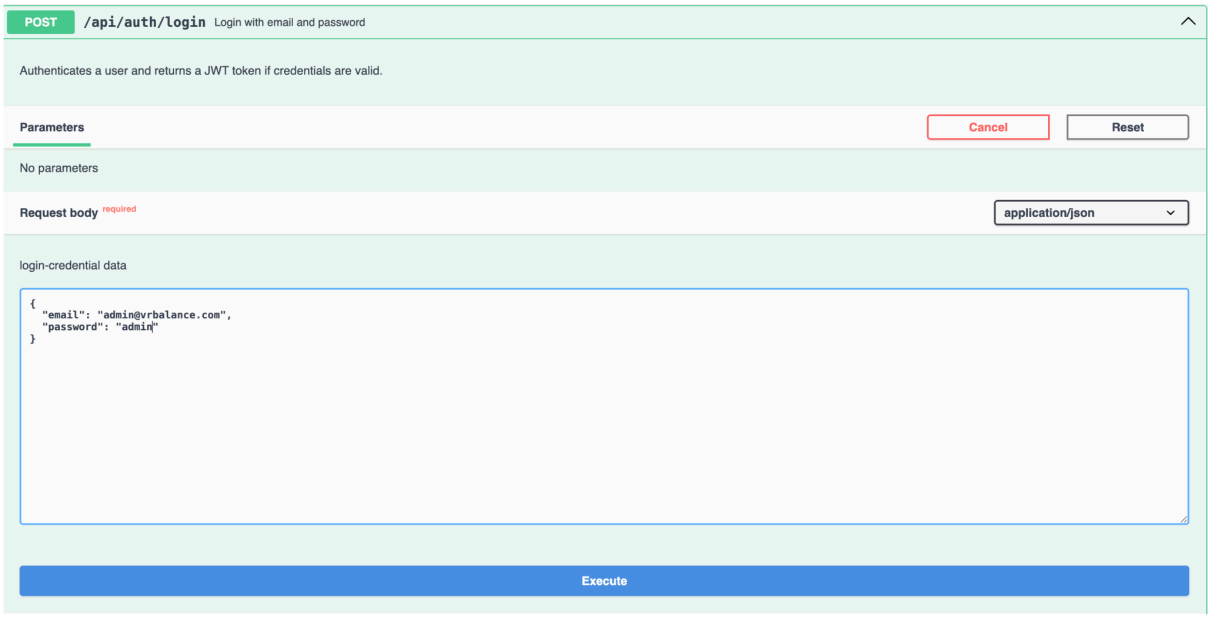
For authentication I am using JWT. Navigate to the file **JwtService—method: generateToken()** to see what is stored in the token.

There are two ways to authenticate:

1. **email en password (/api/auth/login)**
   This endpoint is meant for login via the website
2. **Identifier(email of username) and pincode (/api/auth/login-pincode)**
   This endpoint is meant for login via the Unity app

How to authenticate via Swagger?

1. Go to the endpoint **/login** or **/login-pincode**
2. Fill in the credentials of a user to log in. Here I am using the admin account.



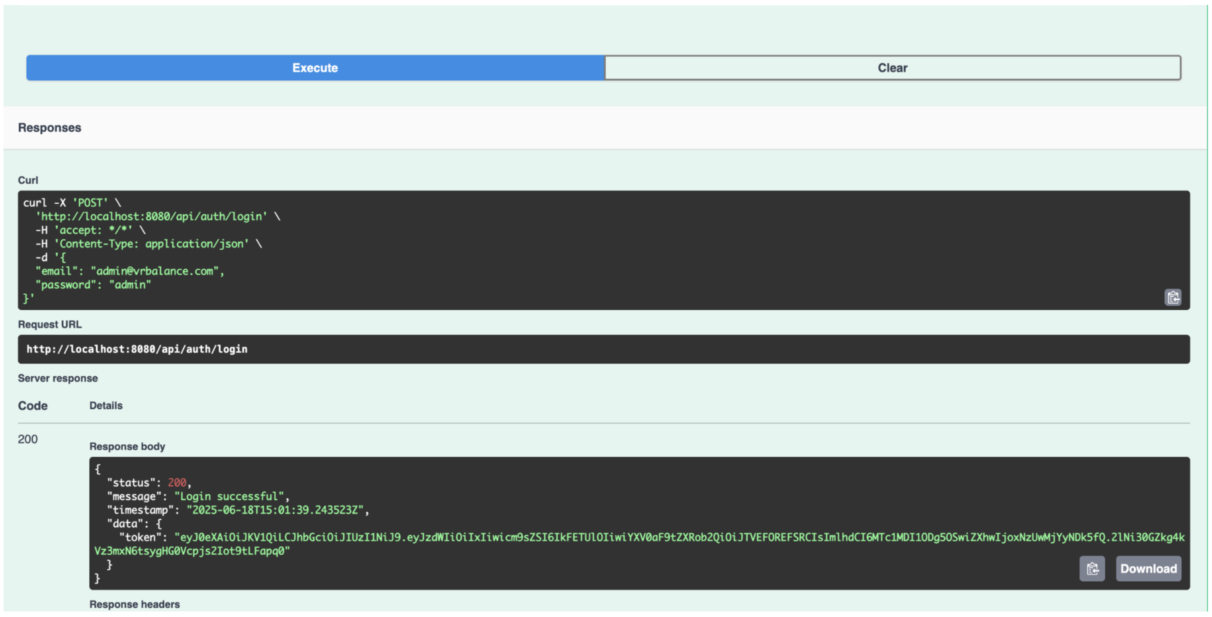
Authenticates a user and returns a JWT token if credentials are valid.

No parameters

login-credential data

```
{
  "email": "admin@vrbalance.com",
  "password": "admin"
}
```

3. Click “execute” and copy the JWT-token it returns



Responses

Curl

```
curl -X 'POST' \
  'http://localhost:8080/api/auth/login' \
  -H 'accept: */*' \
  -H 'Content-Type: application/json' \
  -d '{
  "email": "admin@vrbalance.com",
  "password": "admin"
}'
```

Request URL

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

Server response

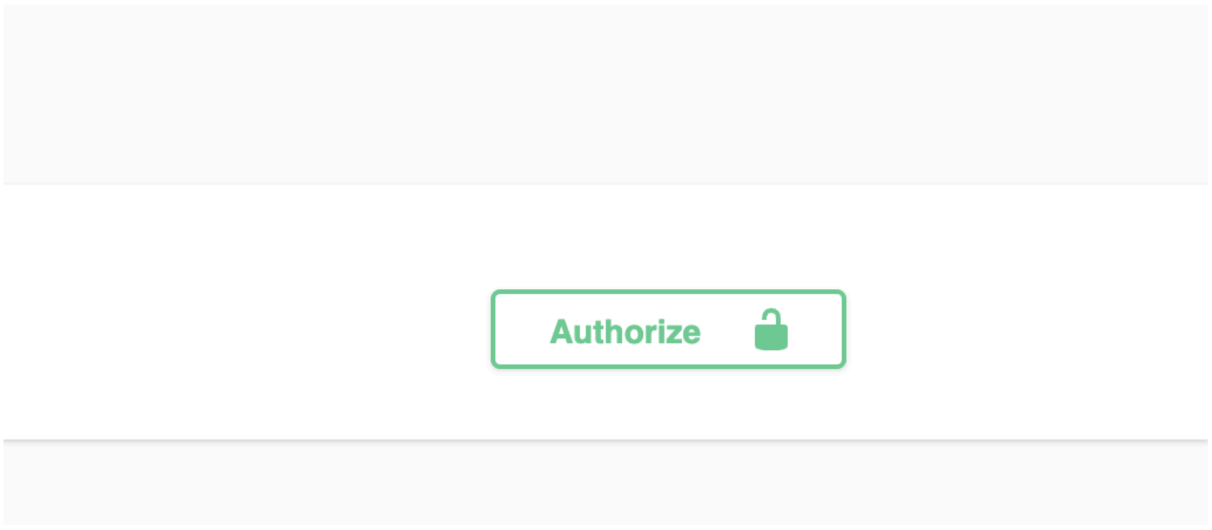
Code	Details
200	Response body

```
{
  "status": 200,
  "message": "Login successful",
  "timestamp": "2025-06-18T15:01:39.243523Z",
  "data": {
    "token": "eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJzdWIiOiIxIiwicm9sZSI6IkFETUlOIiwiYXV0aF9tZXRob2QiOiJTVEFOREFSRCIsImlhdCI6MTc1MDI1ODg5OSwiZXhwIjoxNzUwMjYyNDk5fQ.2lNi30GZkg4k
Vz3mxN6tsygHG0Vcpjs2Iot9tLFapq0"
  }
}
```

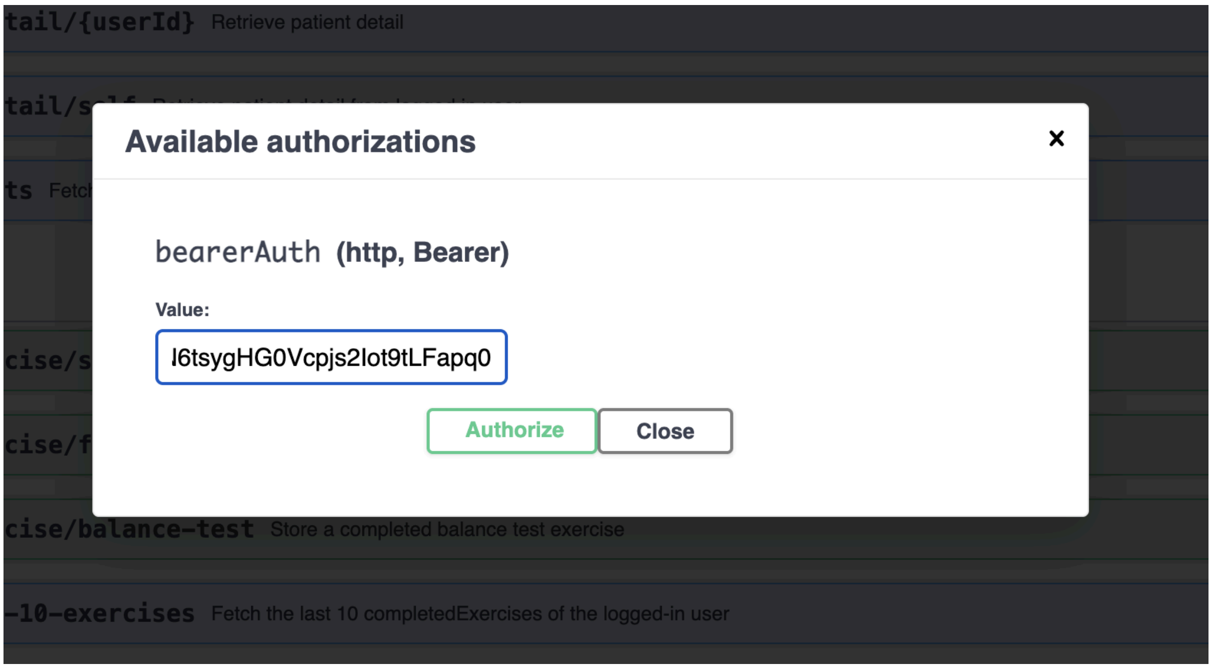
Response headers

```
eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJzdWIiOiIxIiwicm9sZSI6IkFETUlOIiwiYXV0aF9tZX
Rob2QiOiJTVEFOREFSRCIsImlhdCI6MTc1MDI1ODg5OSwiZXhwIjoxNzUwMjYyNDk5fQ.2lNi30GZkg4kVz
3mxN6tsygHG0Vcpjs2Iot9tLFapq0
```

4. Scroll back to the top and click:



5. Paste the token and click “authorize”


tail/{userId} Retrieve patient detail
Available authorizations
bearerAuth (http, Bearer)
Value:
l6tsygHG0Vcpjs2lot9tLFapq0
Authorize
Close
cise/balance-test Store a completed balance test exercise
-10-exercises Fetch the last 10 completedExercises of the logged-in user

6. Now you're logged in, you can tests all the endpoints with swagger

IMPORTANT!

To let Swagger know that an endpoint is secured and requires authentication, you **must** add the following annotation to the method:

```
@SecurityRequirement(name = "bearerAuth")
```

This tells Swagger to apply the global bearerAuth security scheme to the endpoint. As a result:

- A lock icon will appear next to the endpoint in Swagger UI.
- Swagger will automatically include the JWT token you provided via the “Authorize” button when testing the endpoint.

Go to the endpoint **/me** in the userController.java to see a full explanation of how it works.

Securing and exposing endpoints

By default, **all endpoints require authentication**. If you want to make an endpoint public (accessible without authorization), you must explicitly tell Spring Security to allow access to that URL.

How to do this:

1. Go to the file SecurityConfig.java.
2. Inside the .requestMatchers() section, add the public URL pattern.

Example:

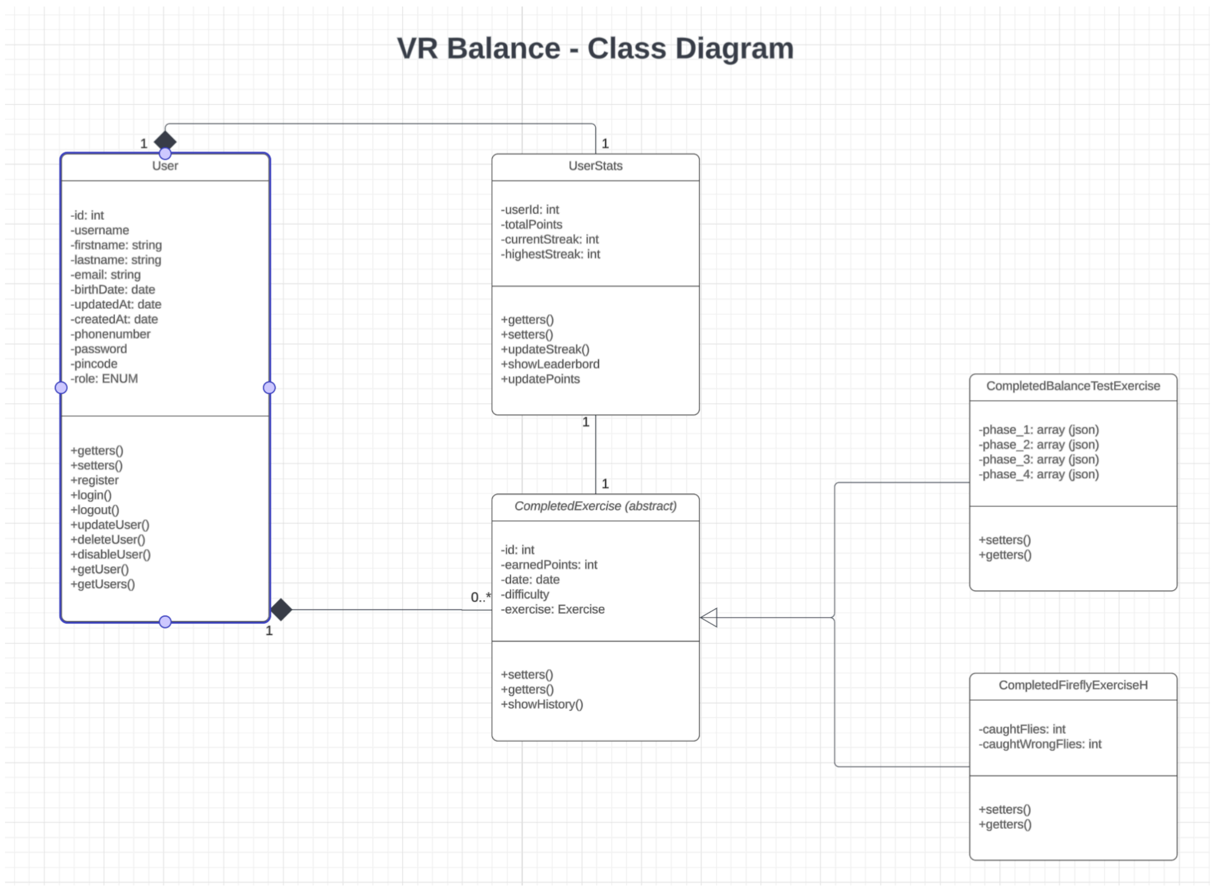
```
.requestMatchers(

        "/api/user-stats/public/**"

).permitAll()
```

- The ** wildcard means: *everything after /public/ is accessible without authentication.*
- This allows you to create both public and secured endpoints under the same controller.

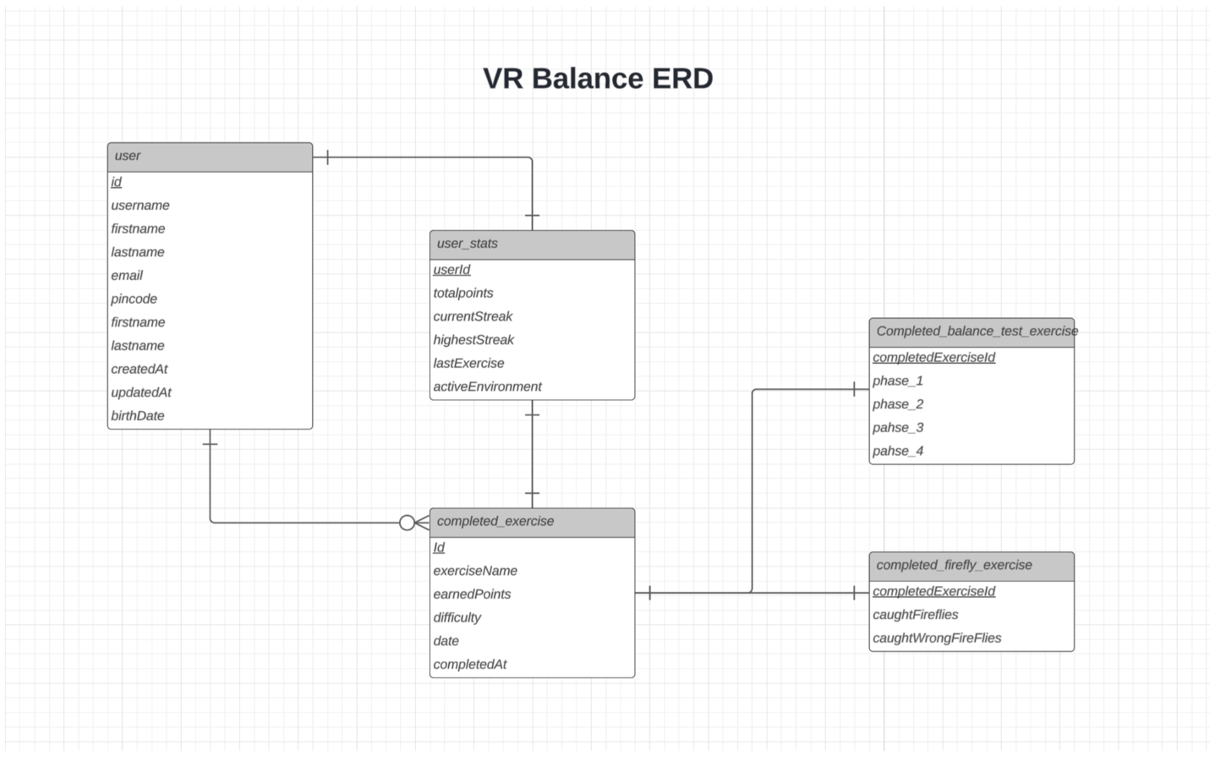
Example in the code:

Go to UserStatsController.java to see how public and secured endpoints are combined within the same class.

Class diagram



ERD



Register flow

A user (patient) can only be created by an account that has the role **PHYSIOTHERAPIST** or **ADMIN** via the **/api/auth/register-patient** endpoint. After registering a user an instruction is sent to the given email by the physiotherapist. Use **mailhog** to test it in development.

Saving an exercise flow

All exercises that do not require additional data beyond what is already provided by the **CompletedExercise** class are stored directly using that class. For exercises that need to store extra fields — such as FireflyExercise and BalanceTest — you should create a subclass that extends CompletedExercise. You can refer to **ExerciseController.java** and **CompletedExerciseService.java** for an example of how this has been implemented.

Important!

The **Balance Test** uses the same structure as a regular exercise, but it is **not** considered an actual exercise that contributes to points or streak progression. Therefore, when a Balance Test is completed, it **does not update the UserStats**. This distinction ensures that tests are separated from gamified progress like scoring and streak tracking.

Database seeder

Navigate to **backend/src/main/vr/balance/app/seed/DatabaserSeerder.java** to view all the data that gets created when the application starts. The most important method is **createUsers()**, which sets up standard test users. The other methods are only used for testing purposes and are not required for normal application use.