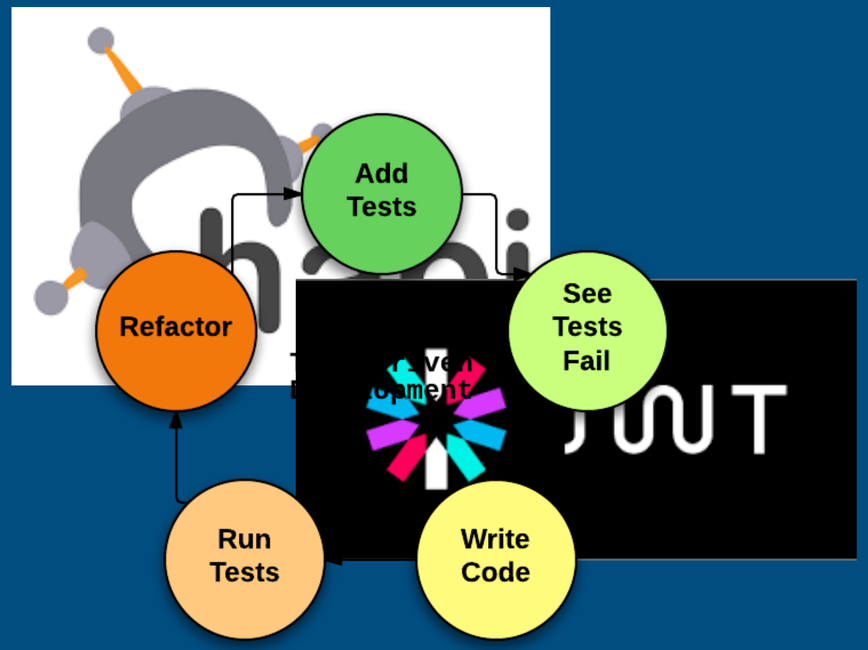
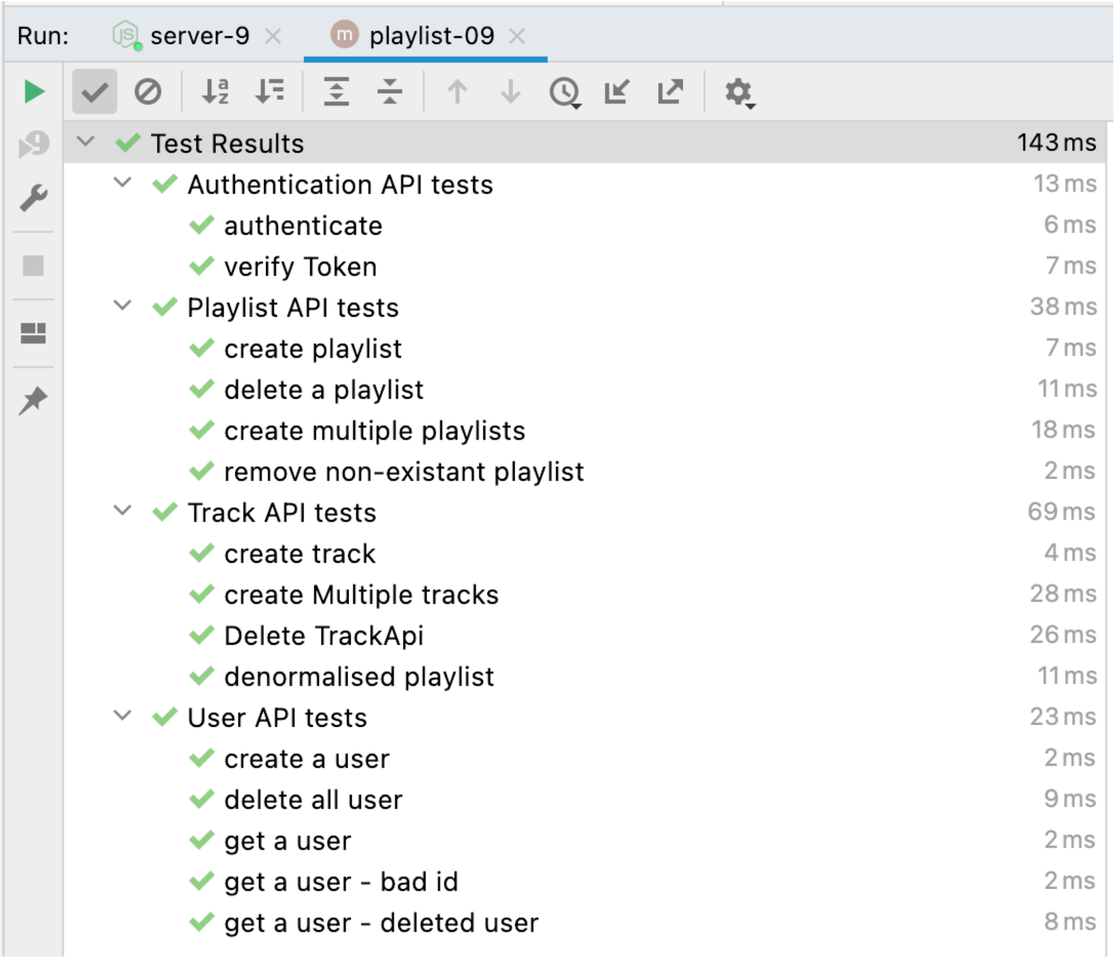
JWT/TDD

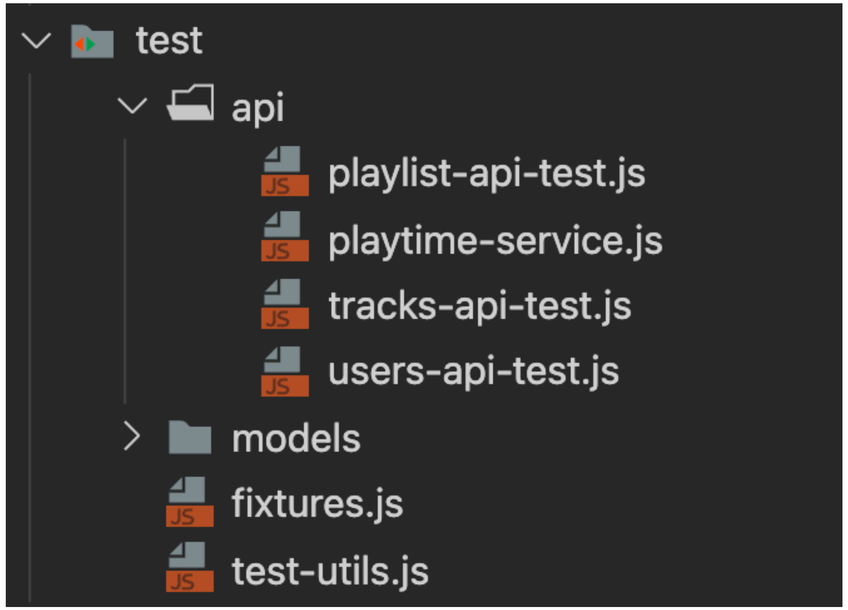


Full Stack Web Development

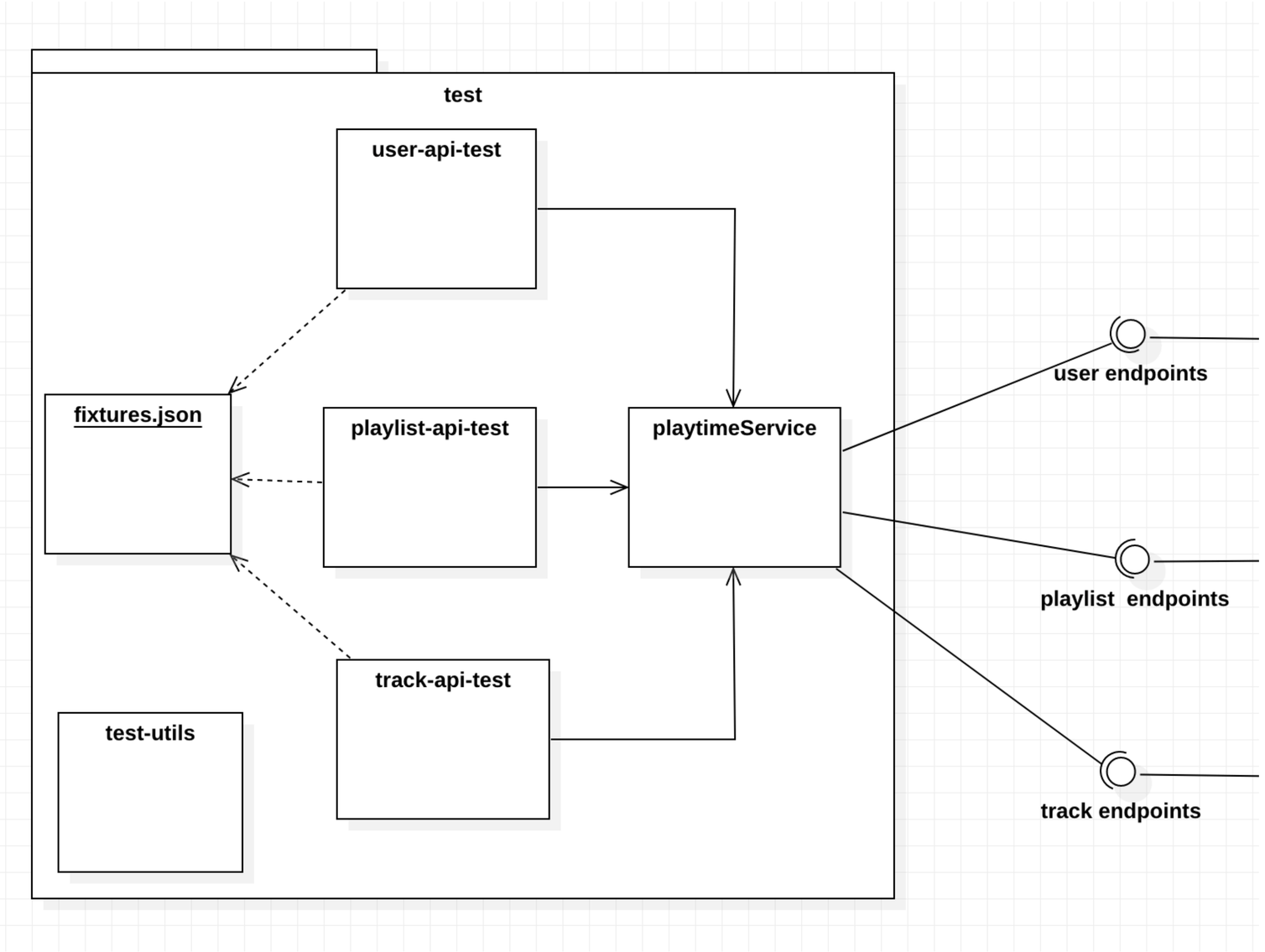
Testing Authenticated Routes



- All of these tests will fail when annotated with “jwt” strategy
- Do we need to rewrite all tests to retrieve and manage the tokens?



playtimeService



- All API access is via playtimeService
- Logical place to encapsulate authentication strategy

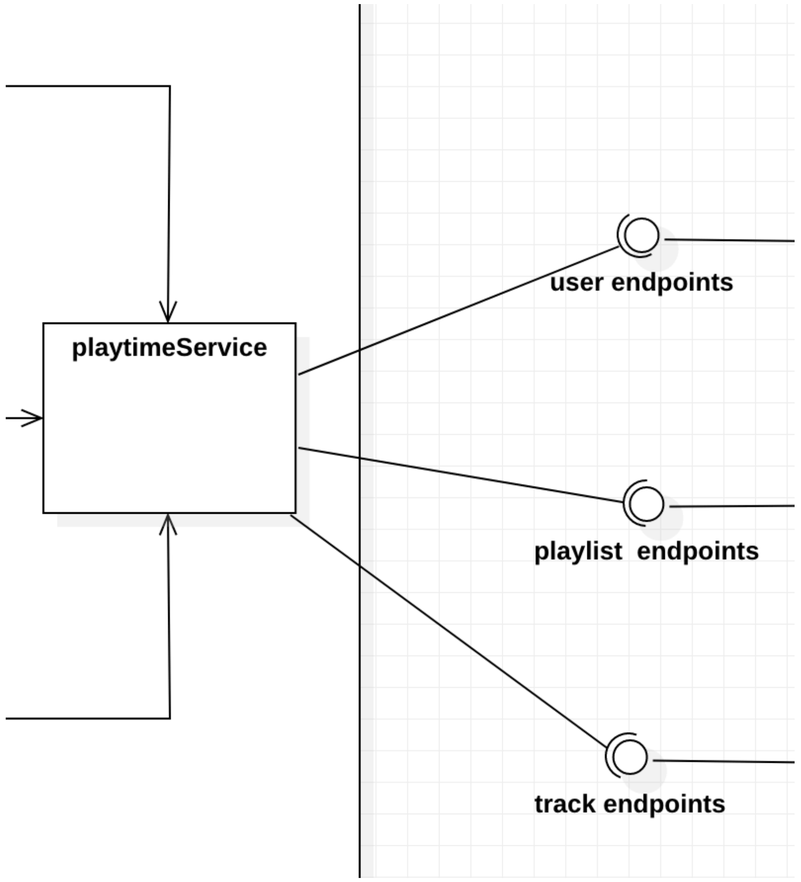
Bearer Authentication

- Bearer authentication (also called token authentication) is an HTTP authentication scheme that involves security tokens called bearer tokens.

- The name “Bearer authentication” can be understood as “give access to the bearer of this token.”

- The bearer token is generated by the server in response to a login request via the Authenticate route.

- The client must send this token in the Authorization header in order to access API endpoints



authenticate method

- Invokes authenticate route to retrieve token
- Set the token as an “Authorisation” header

playtime-service.js

```
async authenticate(user) {
  const response = await axios.post(`${this.playtimeUrl}/api/users/authenticate`, user);
  axios.defaults.headers.common["Authorization"] = "Bearer " + response.data.token;
  return response.data;
},
```

- All subsequent requests will have this header
  - => all requests will carry the token, and hence be validated to access the endpoint

clearAuth method

- Reset the Authorisation header
- Equivalent to logging out of the service

```
async clearAuth(user) {
  axios.defaults.headers.common["Authorization"] = "";
}
```

Separate test to exercise the authenticate route

Check that the token is defined

Check that the token contains the user id + email

auth-api-test.js

```
import { assert } from "chai";
import { playtimeService } from "./playtime-service.js";
import { decodeToken } from "../../src/api/jwt-utils.js";
import { maggie } from "../fixtures.js";

suite("Authentication API tests", function() {

  setup(async function() {
    await playtimeService.deleteAllUsers();
  });

  test("authenticate", async function() {
    const returnedUser = await playtimeService.createUser(maggie);
    const response = await playtimeService.authenticate(maggie);
    assert(response.success);
    assert.isDefined(response.token);
  });

  test("verify Token", async function() {
    const returnedUser = await playtimeService.createUser(maggie);
    const response = await playtimeService.authenticate(maggie);

    const userInfo = decodeToken(response.token);
    assert.equal(userInfo.email, returnedUser.email);
    assert.equal(userInfo.userId, returnedUser._id);
  });
});
```

- Check that a secured route cannot be accessed if user not authenticated

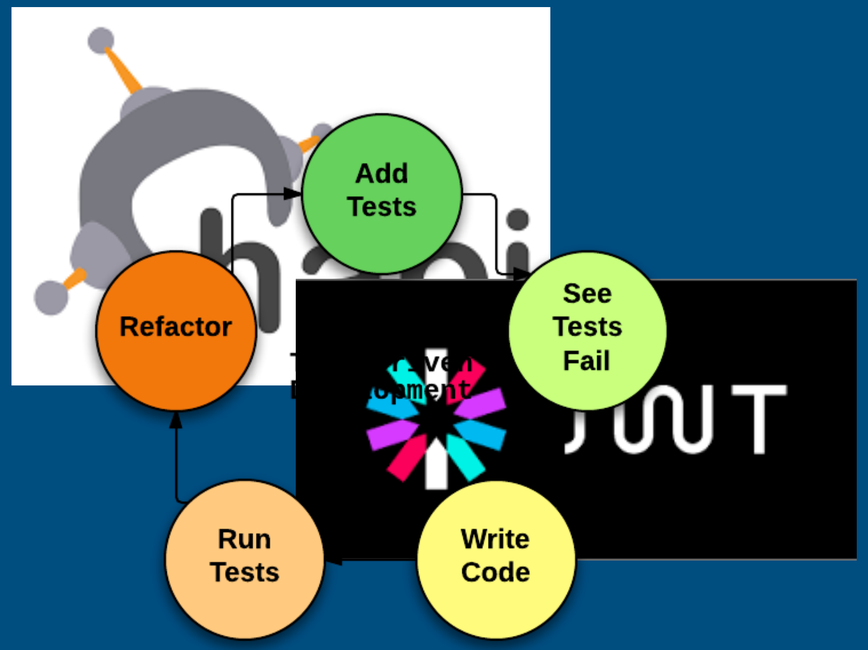
```
test("check Unauthorized", async function() {
  playtimeService.clearAuth()
  try {
    await playtimeService.deleteAllUsers();
    assert.fail("Route not protected");
  } catch (error) {
    assert.equal(error.response.data.statusCode, 401);
  }
});
```

Fixture Setup

- Each test needs an authenticated user to set up the fixture
- When we delete all users, we need to create and authenticate again

```
setup(async () => {
  playtimeService.clearAuth();
  user = await playtimeService.createUser(maggie);
  await playtimeService.authenticate(maggie);
  await playtimeService.deleteAllPlaylists();
  await playtimeService.deleteAllUsers();
  user = await playtimeService.createUser(maggie);
  await playtimeService.authenticate(maggie);
  mozart.userid = user._id;
});
```

JWT/TDD



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