- **API Testing Scripts and Defects for OrangeHRM.**

```
import io.restassured.RestAssured;
import io.restassured.response.Response;

public class OrangeHRMApiTest {
    private String token;

    public void authenticate() {
        token = RestAssured.given()
            .formParam("client_id", "YOUR_CLIENT_ID")
            .formParam("client_secret", "YOUR_CLIENT_SECRET")
            .formParam("grant_type", "password")
            .formParam("username", "Admin")
            .formParam("password", "admin123")
            .post("https://<yourDomain>/web/index.php/api/v2/oauth/token")
            .then().statusCode(200)
            .extract().path("access_token");
    }

    public void testGetProjects() {
        Response res = RestAssured.given()
            .auth().oauth2(token)
            .get("https://<yourDomain>/web/index.php/api/v2/projects");
        res.then().statusCode(200);
        System.out.println(res.asString());
    }

    public void testCreateProject() {
        String body = "{\"name\":\"Test Project\",\"description\":\"Test via API\"}";
        RestAssured.given()
            .auth().oauth2(token)
            .contentType("application/json")
            .body(body)
            .post("https://<yourDomain>/web/index.php/api/v2/projects")
            .then().statusCode(201);
    }
}
```

Defect Scenarios for API Testing

Scenario	Expected Behavior	Possible Defect
Authentication with valid credentials	Returns HTTP 200 and a valid Bearer token	Fails with 401 or returns malformed/missing token
Authentication with invalid credentials	Returns HTTP 400 or 401	Returns HTTP 200 or invalid token
GET resource with valid token	Returns HTTP 200 and valid data	403 Forbidden, 401 Unauthorized, or incorrect data
GET non-existing resource	Returns HTTP 404 NOT FOUND	Returns 200 with error message or empty response
POST with valid payload	Returns HTTP 201 CREATED and new resource	Returns 500, 400, or does not persist data
POST with invalid/missing fields	Returns HTTP 400 BAD REQUEST with descriptive error message	Returns 201 or generic error