Assignment 3: 14a

Task 1: Automated Mutation Testing

Class 1: PromotionAndEmploymentService(Users.Domain)

Mutation score before: 58%

PromotionAndEmploymentService.java 70% 57/81 58% 15/26

Mutation score after: 100%

PromotionAndEmploymentService.java 99% 72/73 100% 26/26

Commit can be found here

Class 2: RegistrationService (Requests.Domain)

Mutation score before: 57%

 RegistrationService.java
 70%
 52/74
 57%
 29/51

 Mutation score after: 98%
 RegistrationService.java
 100%
 74/74
 98%
 50/51

Note: 1 equivalent mutant was found on the following piece of code:

Method: registerRequest:
if (initialToken == null) {

The initial token is not influenced by the input of the method and therefore does not depend on it. It is the result of the way the microservice deals with tokens and is, therefore, difficult to refactor in multiple classes.

Commit can be found here.

Class 3: RequestHandler (Requests.Domain)

Mutation score before: 36%

 RequestHandler.java
 42%
 15/36
 36%
 8/22

 Mutation score after: 95%
 RequestHandler.java
 100%
 36/36
 95%
 21/22

Commit can be found here.

Class 4: EmployeeService(Users.Domain)

Mutation score before: 29%

 EmployeeService.java
 18%
 3/17
 29%
 2/7

 Mutation score after: 100%

 EmployeeService.java
 100%
 16/16
 100%
 7/7

Commit can be found here.