



ASSIGNMENT 3

Software Engineering Methods 2020

TEAM MEMBERS:

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HAGEMANS;ALEXANDRU LUNGU;ALEX
MAAT;EE XUAN TAN

Class 1: RoomScheduler

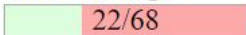
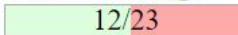
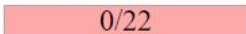
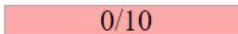
Initial commit:

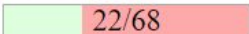
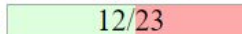
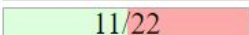
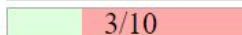
<https://gitlab.ewi.tudelft.nl/cse2115/2020-2010/8-corona-proof-room-scheduling/op29-sem58/-/commit/fad7f22bbf57c8b1e7f639e8150569c09be3858b>

Commit that fixed one of the tests:

<https://gitlab.ewi.tudelft.nl/cse2115/2020-2010/8-corona-proof-room-scheduling/op29-sem58/-/commit/6b40654cd83d72166e71fd07c137a05d914767c8>

After assignment 2, we refactored some classes and therefore did not have any test cases for this class yet. However, looking at this class, it is an important class that naturally should be tested. Here we have killed 3 mutants in the method `findSuitable`, this is a method that returns the suitable list of rooms for a certain lecture given the rooms with required capacity, datepair and slots of ids that do not overlap within year groups. The 3 mutants were 2 negated conditionals and 1 that tested if the tests would pass if an empty list was returned. Adding these test cases we killed all the mutants in this method.

Name	Line Coverage	Mutation Coverage
RoomScheduleController.java	32%  22/68	52%  12/23
RoomScheduler.java	0%  0/22	0%  0/10

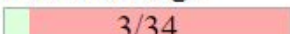
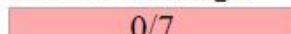

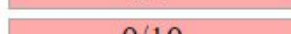
Name	Line Coverage	Mutation Coverage
RoomScheduleController.java	32%  22/68	52%  12/23
RoomScheduler.java	50%  11/22	30%  3/10

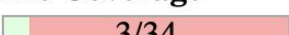
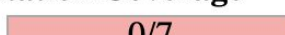
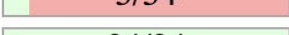

Class 2: Student

Commit:

<https://gitlab.ewi.tudelft.nl/cse2115/2020-2010/8-corona-proof-room-scheduling/op29-sem58/-/commit/7942bfef21736f3decbf0ea86d973bf3e8f84fc2>

Some mutants for getters in this class were not killed because the getters were not properly tested even though their lines were covered. This was easily fixed by adding a simple test for all getters in this class. The other mutations were located in `isEnrolledFor` because this method was not covered by any tests at all, so adding tests for this class was enough.

Name	Line Coverage	Mutation Coverage
RoomSchedule.java	9%  3/34	0%  0/7
Student.java	63%  15/24	0%  0/10

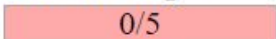
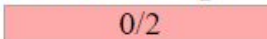
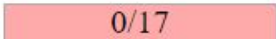
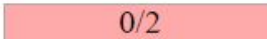
Name	Line Coverage	Mutation Coverage
RoomSchedule.java	9%  3/34	0%  0/7
Student.java	100%  24/24	100%  10/10

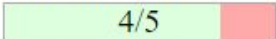
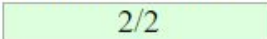
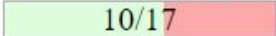
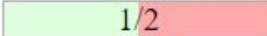
Class 3: Director & LectureBuilder

Commit:

<https://gitlab.ewi.tudelft.nl/cse2115/2020-2010/8-corona-proof-room-scheduling/op29-sem58/-/commit/c772ed4aebb4b3bd5ac33faa2f512e926ff3903b>

After the refactoring assignment, we added a builder pattern, but without testing. This was due to the lack of time then, but now it provides a good opportunity to add tests and improve the mutation score a lot. This is done by testing the functionality of the Director class, using the LectureBuilder class, which meant this class got tested as well. What's quite remarkable about this adding of tests is that we actually found a major bug in our code, which had switched some parameters for the constructor of a Lecture object. This meant that the minimum number of students was set as the number of timeslots the lecture would take, and vice versa. Of course, we fixed this as well in the commit linked above.

Name	Line Coverage	Mutation Coverage
Director.java	0% 	0% 
LectureBuilder.java	0% 	0% 


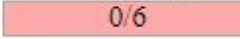
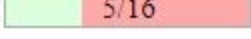
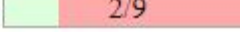
Name	Line Coverage	Mutation Coverage
Director.java	80% 	100% 
LectureBuilder.java	59% 	50% 

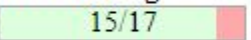
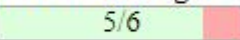
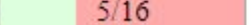
Class 4: AuthenticationController

Commit:

<https://gitlab.ewi.tudelft.nl/cse2115/2020-2010/8-corona-proof-room-scheduling/op29-sem58/-/commit/c07f33479807ea17fdac90d806a28f6c8c215ae1>

This class was not tested before due to time constraints, so the mutation coverage was 0%. We added tests for most of the methods and managed to achieve high line coverage with a mutation coverage of 83%.

Name	Line Coverage	Mutation Coverage
AuthenticationController.java	6% 	0% 
JwtRequestFilter.java	31% 	22% 

Name	Line Coverage	Mutation Coverage
AuthenticationController.java	88% 	83% 
JwtRequestFilter.java	31% 	22% 