Software Engineering

Testing

3 Ba INF 2018-2019

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1 Practical

- Deadline: **November 12, 23u55**

2 Context

Testing is the most important part of testing the quality of a product. We use testing throughout the entire project, as every step can introduce new bugs. Testing can be done on many different levels, from testing small components to testing the interaction within the entire system. The purpose of this assignment is to use both *white box* and *black box* testing in combination with both unit testing and integration testing.

3 Assignment

1. Consider the source file **Analytics/Eclat.java**. The function **calculate()** calculates the sets of items often sold together.

    (a) Study the given algorithm.

    (b) Create the *control flow graph* for the given algorithm.

    (c) Compute the Cyclomatic Complexity.

    (d) Determine a set of independent paths.

    (e) What is the relation between the independent paths and the Cyclomatic Complexity?

    (f) Implement *test cases* to execute these paths, indicate which case corresponds to which independent path.

2. The package **Core.clients** is a package containing all logic about the different clients in the system (both unregistered as registered clients). It was developed by using outsourcing. It is your responsibility to write an adequate number of unit test (using **JUnit**) and report possible bugs in the code. Since it was outsourced we only got a **.jar** file.

   (a) Use the documentation to check how the different functions work and what they should return.

   (b) Use **JUnit** in Eclipse to write and execute a sufficient amount of unit tests.

   (c) Create at least one *Integration Test* for the package **Core** in combination with the **Core.Clients** package, which has to test the basic functionality of these packages working together.