Prof. Lichter

SQA
2019

Andreas Steffens, Konrad Fögen

Exercise 5

sqa@swc.rwth-aachen.de

Issued: 17.06.2019 Submission: 03.07.2019 Discussion: 05.07.2019

5.1. Task: Glass-Box Testing

We prepared a Java class `StringHelper` with a method which requires glass-box testing. You can find the class and the project skeleton at https://git.rwth-aachen.de/swc-sqa/sqa-2018-glassbox.

a) Start by constructing a control-flow graph (CFG) of the method.
b) Derive a test suite that satisfies branch coverage. Please use a table with input, branch and expected results as depicted in the lecture.
c) Implement the tests using Junit 5. Measure the coverage of your tests via *JaCoCo*. It is already configured, and you can invoke it via Maven by running `mvn clean test`. *You can generate a HTML report via `mvn jacoco:report`. The report is then stored at target/site/jacoco.*
d) Analyze your test suite if it already satisfies *boundary interior coverage*. Discuss whether or not it is already satisfied. If it is not satisfied, derive a new test suite to satisfy boundary interior coverage. Document the changes you made.
e) Annotate the CFG with data flow information.
f) Analyze your test suite if it already satisfies *all-p-uses*. Discuss whether or not it is already satisfied. If it is not satisfied, derive a new test suite to satisfy all-p-uses. Document the changes you made.

5.2. Task: Static Examination

Please find attached a software requirement specification (SRS) of the software *`SplitPay`*, an android application for failed dinner dates, i.e. it allows you to track and settle shared expenses which potentially includes paying for rent or splitting check at dinner.

Conduct a technical review on this document using the review techniques introduced in the lecture. All your activities have to be documented. Review the document according to the requirements characteristics and linguistic defects.

a) This is about an actual *physical* review meeting. Start your review by planning the review. Do not forget to define the necessary roles within your group. Note that an author and a manager are not available to participate in your review. Document all your preparation activities and the necessary effort.

b) Meet physically and conduct the review. Document all findings using the provided inspection report template.

    1) Use the attached checklist to structure your reviewing.
    2) Use the NLP examination rules to discover linguistic defects in the SRS.

c) After your review, reflect on the review process and the results you've achieved. Discuss your perceived advantages and disadvantages of a technical report. Write a short summary of your reflection.

We would like to ask you to use the templates provided in the L²P room for answering the exercises.

Your results must be handed in as a single PDF file or as a compressed ZIP file containing all necessary files and data named „**SQA2019_AssignmentX_GroupX.zip**"; replace the **X** with your group identifier. Your submission should be submitted via Moodle.