PV260 Software Quality

Assignment 2 - Testing

Spring 2021

1 General Information

1.1 Dates

- Assignment start: 29. 4. 2021
- Assignment deadline: 13. 5. 2021 23:59

1.2 Submission

Task 1 - 3 Answers can be submitted in .txt, .doc, .odt, .docx or .pdf formats, but .pdf is preferred. If you use more than 1 class for the Selenium automation (Task 3), submit the answer for this task as a .zip file.

Task 4 Please submit your solution as a txt file containing the names of the team members and a link to a Github repository with solution.

The submissions should be uploaded to the Homework vault called *[Java_Lasaris]Assignment 2: Testing*: `https://is.muni.cz/auth/el/fi/jaro2021/PV260/ode/j_lasarsis_assignment_2/`

Name of the submitted file should be as follows: *lastname1-lastname2-assignment2.pdf/txt....*

The tasks should be solved in the groups of two. Only one solution per group should be submitted.

1.3 Evaluation

This assignment is split into two parts evaluated separately as follows:

Task 1 - 3 add up to max 10 points
Task 4 max 5 points

2 Mandatory Tasks

In the report, always include answers/comments and diagrams from the tools that are relevant to the individual tasks.

2.1 Task 1

- Test the buggy application on URL `https://pv260-buggy-app.karolyi.cz/`
- What the application is supposed to do (Specification/Requirements):
  - Input: if you enter non-empty First Name and Last Name, the following Output is shown on the site.
  - Output: You are "First Name" "Last Name". You are "Random number in range 140-190" cm high.

- Find and report as many bugs as you can. Abstract of the bug should be sufficient enough for definition of most of the bugs, but sometimes Repro Steps, Actual Result vs Expected result are needed too.
- Creating Test Plan prior testing may help you, but is not mandatory.
- What other testing approaches you didn't use would you use in order to verify this application better and find more bugs?
- Do you think the specification is buggy? Do you think it's complete? Why? If you were about to test this application with these requirements at work, is there something you would ask product management about the requirements before starting with testing?

2.2 Task 2

- Your team is about to implement software for e-shop with ambitions to be the biggest e-shop in Czech Republic. Identify at least:
  - 7 attributes which you think are the most relevant for this product to be successful.
  - 15 components which are (almost) necessary for the product to be successful. (use clustering and think not only about user-visible components)
  - 10 capabilities
  - 5 test cases
  - 8 of the most risky clusters of impact (e.g. one cluster of impact can be "not getting existing customers to buy more of our stuff").
- Explain why the attributes and clusters of impact you chose are of the highest importance. How did you minimize chances that there are other attributes or clusters of impact you do not see, but are of higher importance than those you wrote down?

2.3 Task 3

- Identify at least 3 different components (visible to all Internet users) of Wikipedia.
- For each of these components, write a test case in Selenium WebDriver. From those 3 test cases, make at least 1 negative test case and at least 1 positive test case.

2.4 Task 4

- Using the project ProductFilter: `https://github.com/stanozm/PV260-ProductFilter.git` write unit tests for classes AtLeastNOfFilter and Controller which will test the following behavior:
- AtLeastNOfFilter:
  - The constructor throws the exceptions as documented
  - The filter passes if at least exactly n child filters pass
  - The filter fails if at most n-1 child filters pass

  Try to only use the AtLeastNOfFilter class itself in the tests, do not depend on other project classes

- Controller:
  - The controller sends exactly the products selected by the provided filter to Output
  - The controller logs the message in documented format on success
  - If exception occurs when obtaining the Product data, Controller logs this exception
  - If exception occurs when obtaining the Product data, nothing is passed to the Output
- Use Mockito to create the the Test Doubles needed.
- Do not modify the sources in any way. Only add your unit tests to the test folder.