Assignment 1, software testing

You will use Eclipse and JUnit for the assignments in this course. The zip file contains a java project for assignment 1. The software under test in this particular assignment is the method *findLast()*. This method takes an integer array *x* and an integer *y* as input and returns the index of the last occurrence of *y* in the array *x*. The project also contains a JUnit test *lastOccurrenceInFirstElement()*.

Run the test by selecting Run > Run as and click Junit Test. You will observe a failure since the code contains a fault that the given test reveals. Your task in this assignment is to:

1. Identify the fault, located in *findLast()*
    a. Line, statement and motivation
2. If possible, create a JUnit test that does **not** reach the fault.
    a. Explain why it does not reach the fault. If such test is not possible – explain why.
3. If possible, create a JUnit test that executes the fault, but does not result in an error state.
    a. Explain why it reaches the fault and why it does not cause an error. If such test is not possible – explain why.
4. If possible, create a JUnit test that results in an error, but not a failure. Hint: Don't forget about the program counter.
    a. Explain why it causes an error and why it does not cause a failure. If such test is not possible – explain why.
5. For the given JUnit test *lastOccurrenceInFirstElement(),* identify the first error state. Be sure to describe the complete state, i.e., all variables values and the program counter (which instruction it points to).
6. Fix the fault and verify that all your JUnit tests now pass the test execution. (take a screen shot)

Your submission should include:

- A pdf file with your name and your answers to above, including the JUnit tests and your screen shot. Name the file using your user identity and the assignment number, e.g., a16abcde-Assignment1.pdf.