TVVS – Mutation Testing

Setup:

1. Download Eclipse for your platform at the following URL
   https://www.eclipse.org/downloads/
2. Run installer, select Eclipse IDE for JAVA Developers and finish installation
3. Run Eclipse and on the navigation bar select Help -> Eclipse Marketplace…
4. Type "pit" in the search bar
5. One result should be "Pitclipse 2.0.0". Click on its install button
6. Accept the license terms and click "Finish"
7. A warning should pop-up, click "Install anyway"
8. When the installation is finished click "Restart Now"
9. Checkout the project files from the Github repository
   https://github.com/PoiSoNz/TVVS_Mutation_Testing
10. On the navigation bar select File -> Open Projects from File System
11. On the newly opened window, click the button "Directory…" and select the folder "TVVS_Mutation" inside the folder where you just checked out the GitHub project
12. Click the button "Finish"
13. On the package explorer right-click your project name and select "Properties"
14. On the newly opened window click on "Java Build Path" and on the tab "Libraries" click on "Add library…"
15. Select JUnit and click "Next"
16. Make sure version 5 is selected and click "Finish" and "Apply and Close"

Exercises:

Inside the project you will find 3 .java files. 1 with the functions you will test, 1 with a auxiliary class and the other with said tests. You will find that all tests pass yet if you run the Pit mutation tests, all tests let 1 or more mutants survive. Analyze the code of both the functions and the tests to find out why and make the necessary changes (additions are also allowed) to prevent this. You are to assume that the functions are working as intended so you are only allowed to make changes on the test file.

Exercise 4 and Fibonacci require 100% code coverage.