

Chapter 3

This was probably the most enjoyable and interesting part so far. It involved doing many things that we have not done before: writing scripts in bash, designing ways to run our test cases and their various drivers, create meaningful output, etc. It took a bit to get it all figured out, but it was very worthwhile and satisfying doing so. But it wasn't all sunshine and dandelions. There were some things which were just painful. For example, interacting with the java classes in the project proved to be quite difficult. They would all compile with no errors, but running them always gave the `ClassNotFoundException` error, even though we directed the classpath to the file and saw that the `.class` file was there. There was seemingly no remedy in sight until we took the project and built it in an IDE. I'm not sure what made it work, if the IDE downloaded some dependencies or something, but it worked after that running from the command line.

TestID: 6
Requirement: The union of two large numbered Cohorts
Component: Cohort
Method: `public static Cohort subtract(Cohort a, Cohort b)`
Inputs: `[1234567, 2345678] [3456789, 4567890] [3, 4, 5]`
Expected: `[1234567, 2345678, 3456789, 4567890, 3, 4, 5]`
Driver: `CohortUnionDriver "testCase6.txt"`
Notes:

Test ID: 7
Requirement: The subtraction of two non-intersecting Cohorts
Component: Cohort
Method: `public static Cohort subtract(Cohort a, Cohort b)`
Inputs: `[1,2,3,4,5] [6,7,8,9]`
Expected: `[1,2,3,4,5]`
Driver: `CohortSubractDriver "testCase7.txt"`
Notes:

Test ID: 8
Requirement: The subtraction of an empty cohort from a non-empty cohort
Component: Cohort
Method: `public static Cohort subtract(Cohort a, Cohort b)`
Inputs: `[1,2,3,4,5] []`
Expected: `[1,2,3,4,5]`
Driver: `CohortSubractDriver "testCase8.txt"`
Notes:

Test ID: 9
Requirement: The subtraction of a non-empty cohort from a empty cohort
Component: Cohort
Method: `public static Cohort subtract(Cohort a, Cohort b)`

Inputs: [] [1,2,3,4,5]
Expected: []
Driver: CohortSubractDriver "testCase9.txt"
Notes:

Test ID: 10
Requirement: The subtraction of an empty cohort from an empty cohort
Component: Cohort
Method: public static Cohort subtract(Cohort a, Cohort b)
Inputs: [] []
Expected: []
Driver: CohortSubractDriver "testCase10.txt"
Notes:

```
/TestAutomation
  /project /src
    /bin
    /...
  /scripts
    runAllTests.sh
    ... other helper scripts
  /testCases
    testCase1.txt test, Case2.txt ...
  /testCasesExecutables
    testCase1...
  /temp
  /oracles
    testCase1Oracle...
  /docs
    README.txt
  /reports
    testReport.(txt or html)
```

The file runAllTests.sh script will run through all the test case files in the testCases folder and run them. Some tests may require a driver to interpret the testCase file and run it. Drivers should be specified in the driver line of the test Case. The driver line in the test case is written the way you would run that file from the command line. The driver, located in testCaseExecutables, will run the test case and deliver the output of the test to the script, which compares the output to the oracle and then outputs the result in a results html file located in reports. At the end of the script this file will be opened in a browser. Test cases specify: the test id, requirement being tested, the component being tested, the inputs of the method, the expected output, a driver (if applicable), and notes.