CS 576
Dependable Software Systems

Summer 2016

Project Assignment
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1. READ ME

My project StablePriorityQueue contains four java classes namely:

Job.java: Is the bean object class to store the job name, its priority key and its count of occurrence. I have added count to use this info to make the priority key stable.

PQHeap.java: This class contains all the methods to perform operations on priority queue.

PQTest.java: This is the main class which uses methods from PQHeap.java to implement the priority queue and interact with the user.
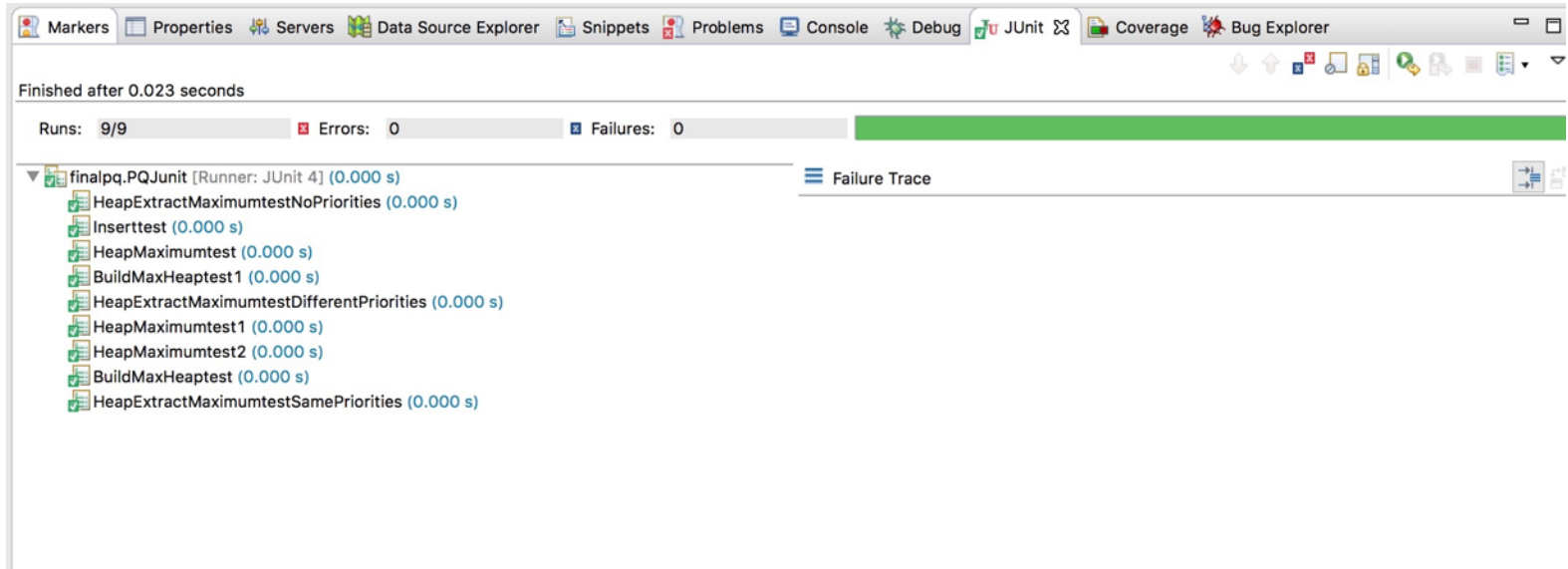
PQJunit.java: This is the JUnit test case class that covers all the functional methods in PQHeap.java and other classes.

This project is been implemented in Eclipse Mars IDE, with Eclemma plugin and FindBugs Plugin within eclipse.

All test cases are written in PQJunit.java and just need to be executed as JUnit to see the test case outputs. All parameters for it are initialized and tested within the test cases. All test methods indicate their test methods as comment documentation in the code.

2.EMMA Report

The reports generated are attached below:
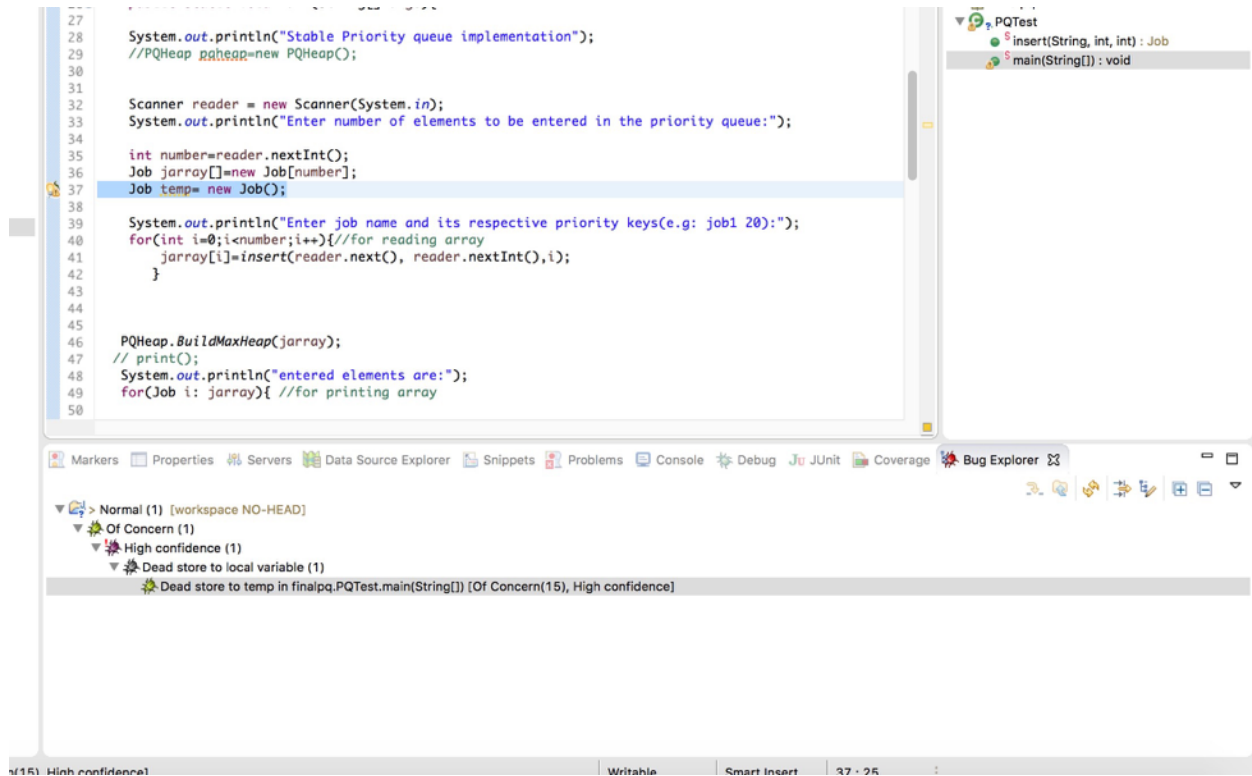

The coverage achieved in the functionalities class: **98.4%**

2.FindBugs Report

First Find Bugs Report:


```
27
28    System.out.println("Stable Priority queue implementation");
29    //PQHeap pqheap=new PQHeap();
30
31
32    Scanner reader = new Scanner(System.in);
33    System.out.println("Enter number of elements to be entered in the priority queue:");
34
35    int number=reader.nextInt();
36    Job jarray[]=new Job[number];
37    Job temp= new Job();
38
39    System.out.println("Enter job name and its respective priority keys(e.g: job1 20):");
40    for(int i=0;i<number;i++){//for reading array
41        jarray[i]=insert(reader.next(), reader.nextInt(),i);
42        }
43
44
45
46    PQHeap.BuildMaxHeap(jarray);
47    // print();
48    System.out.println("entered elements are:");
49    for(Job i: jarray){ //for printing array
50
```

▼ PQTest
   insert(String, int, int) : Job
   main(String[]) : void

Markers ▢ Properties ⁑ Servers ▦ Data Source Explorer ▤ Snippets ▥ Problems ▢ Console ✣ Debug Ju JUnit ▤ Coverage ✣ Bug Explorer ✕

▼ ▣ > Normal (1) [workspace NO-HEAD]
   ▼ ✣ Of Concern (1)
      ▼ ✣ High confidence (1)
         ▼ ✣ Dead store to local variable (1)
            ✣ Dead store to temp in finalpq.PQTest.main(String[]) [Of Concern(15), High confidence]

n(15) High confidence]   Writable   Smart Insert   37 : 25

FIX: The fix to this bug was to remove the unused data store variable of type object Job.

Current Find Bugs Report, generates no errors:

Markers ▢ Properties ⁑ Servers ▦ Data Source Explorer ▤ Snippets ▥ Problems ▢ Console ✣ Debug Ju JUnit ▤ Coverage ✣ Bug Explorer ✕

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