**Institute of Technology Tralee**

**BSc. in Computing with Specialism (Group 5) - Year 1**

**Continuous Assessment #2**

**Date: 5/12/13**

**Time: 10a.m. – 12p.m.**

**Introduction to Programming**

**Instructions:** Attempt the following question. You should use the JCreator IDE for coding. When you are finished you must print out your code for correction.

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**Q1.**

A Java program is required that will prompt for and read in exactly 5 student marks for a continuous assessment. You should use a **do-while** loop for the main iteration process here.

The program must validate each mark fully, to ensure that only **whole numbers** within the range 0 to 100 inclusive are accepted by the program. You can take it that the user will enter a whole number for the mark itself. Should the user enter an invalid mark for any particular student, then the program should just loop continually until a valid replacement mark has been supplied. You can use a **while** loop for this validation process.

Once all the marks have been entered by the user, the program should display the following:

* The average of the valid marks entered to **2 decimal places**
* The largest valid mark entered
* The smallest valid mark entered
* The percentage of valid marks that were at least 70
* The number of valid marks that were below 40

Using the test values as indicated in the screen shots below, the program should give you **exactly** the following output when it runs, including any banners, blank lines, tabs etc.

Also note that there will be a few marks awarded for having a **single-line comment** and **a meaningful multi-line comment at the top of the program**.

**Sample Screen Shot**

**The user begins by entering a valid mark, then a series of invalid marks are entered for the second student before eventually a valid one (92) is entered. Some invalid marks are also entered for the third student before a valid one (17) is entered. Then 2 more valid marks are entered and the do-while loop finishes. Next the program results are displayed.**

