**Texas Tech University**

**Computer Science Department - CS 3365 – Software Engineering II**

**Due: Feb 21, 2020 (Midnight)**

**5 marks of the total course mark**

**Submission through the Blackboard System ONLY**

**No Other Forms of Submissions Will be Accepted**

**Goal**: Functional testing of a given code

Description:

Consider the sample Java application given below. The program is a Java-based garage application given in the following GitHub repository:

<https://github.com/KI7MT/java-app-examples/tree/master/ConsoleApps/src/beam/example/parking>

The application calculates the total charges for using parking garage.

You are asked to:

1. Create functional test cases using equivalence partitioning for this program.
2. Implement five functional tests you created using JUnit framework.

Deliverable:

1. Compile the program and provide screenshots of the successful execution (0.5 mark)

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1. Two tables showing the 1) equivalence partitions, 2) test case specifications covering each partition. (2 marks)

Template for Table 1 (\* **only 12 partitions should be sufficient** \*)

|  |  |  |  |
| --- | --- | --- | --- |
| Partition ID | Input variable | Valid partition | Invalid partition |
| 1 | Hours | 1 < hours < 24 |  |
| 2 | Hours |  | <=0 |
| 3 | Hours | Hours > 24 |  |
| 4 | Hours | Hours == 24 |  |
| 5 | Hours | Hours == 1 |  |
| 6 | Hours | Hours == -1 |  |
| 7 | Run Total | 2.0<=Run Total<=10.0 |  |
| 8 | Run Total | mincharge |  |
| 9 | Run Total | maxcharge |  |
| 10 | Run Total |  | Run Total < 2.0 |
| 11 | Charge | 2.0 <= charge <= 10.0 |  |
| 12 | Charge |  | Charge < 2.0 |

Template for Table 2

|  |  |  |  |
| --- | --- | --- | --- |
| Test ID | Test inputs | Expected output | Partition ID covered |
| 1 | 10.0 | 5.5 | 1 |
| 2 | -2.0 | 0 | 2 |
| 3 | 30 | 10.0 | 3 |
| 4 | 24 | 10.0 | 4 |
| 5 | 1 | 2.0 | 5 |
| 6 | -1 | Quit the program | 6 |
| 7 | 700 | 10.0 | 7 |
| 8 | 3 | 2.0 | 8 |
| 9 | 40 | 10.0 | 9 |
| 10 | -20 | 0 | 10 |
| 11 | 5 | 3.0 | 11 |
| 12 | 0 | 0 | 12 |

1. The implementation of five selected functional test cases created through equivalence partitioning (the source code of your JUnit for the five functional tests implemented (2 marks)

* Test case 1 for hours between 1 and 24:

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* Test case 2 for hours <= 0:

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* Test case 3 for hours > 24:

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* Test case 4 for hours == 24

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* Test case 5 for hours == 1

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1. A screenshot of each JUnit test case implemented (0.5 mark)

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