**Fall 2019**

**CSE-5321-002 - Software Testing**

**Homework Assignment 3**

|  |  |
| --- | --- |
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Please find the worksheet I used for calculations (HW\_3\_answers.xlsx), attached to the zip file I submitted.

**Question 1**

**Decision table:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Rule 1** | **Rule 2** | **Rule 3** | **Rule 4** | **Rule 5** | **Rule 6** |
| **Conditions** | | | | | | |
| 250.1 <= batteryPower (watts) <= 1,000.0 | Y |  |  |  |  |  |
| 125.0 <= batteryPower (watts) <= 250.0 |  | Y |  |  |  |  |
| 75.1 <= batteryPower (watts) <= 124.9 |  | Y | Y |  |  |  |
| 50.0 <= batteryPower (watts) <= 75.0 |  |  | Y | Y |  |  |
| 0.1 <= batteryPower (watts) <= 49.9 |  |  |  |  | Y |  |
| batteryPower (watts) == 0.0 |  |  |  |  |  | Y |
| **Actions** | | | | | | |
| green | ON | OFF | OFF | OFF | OFF | OFF |
| yellow | OFF | ON | ON | OFF | OFF | OFF |
| red | OFF | OFF | ON | ON | OFF | OFF |
| bell | OFF | OFF | OFF | OFF | ON | OFF |
| siren | OFF | OFF | OFF | OFF | OFF | ON |
| **Table implements "first-of" rule** | | | | | | |

**Test case table:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case Number** | **Inputs** | **Expected Outputs** | | | | | **Basis Path** | Comments |
| **batteryPower(watts)** | **red** | **yellow** | **green** | **bell** | **siren** |
| 1 | 0.0 | FALSE | FALSE | FALSE | FALSE | TRUE | 15-16-32 |  |
| 2 | 49.9 | FALSE | FALSE | FALSE | TRUE | FALSE | 15-18-19-32 |  |
| 3 | 75.0 | TRUE | FALSE | FALSE | FALSE | FALSE | 15-18-21-22-32 |  |
| 4 | 124.9 | TRUE | TRUE | FALSE | FALSE | FALSE | 15-18-21-24-25-32 |  |
| 5 | 250.0 | FALSE | TRUE | FALSE | FALSE | FALSE | 15-18-21-24-27-28-32 |  |
| 6 | 250.1 | FALSE | FALSE | TRUE | FALSE | FALSE | 15-18-21-24-27-30-32 |  |
| 7 | 0.1 | FALSE | FALSE | FALSE | TRUE | FALSE | - |  |
| 8 | 50.0 | TRUE | FALSE | FALSE | FALSE | FALSE | - |  |
| 9 | 75.1 | TRUE | TRUE | FALSE | FALSE | FALSE | - |  |
| 10 | 125.0 | FALSE | TRUE | FALSE | FALSE | FALSE | - |  |
| 11 | 1000.0 | FALSE | FALSE | TRUE | FALSE | FALSE | - | Extreme range test |

Code coverage achieved is: full boundary coverage, full statement coverage, full decision coverage and extreme range coverage.

The test cases support the description (logical expression).