SSW-567 Testing, Qual. Assur. & Maint

HW-03-2

Zituo Yan

“I pledge on my honor that I have not given or received any unauthorized assistance on this assignment/examination. I further pledge that I have not copied any material from a book, article, the Internet or any other source except where I have expressly cited the source “

# ASSIGNMENT:

Create a complete set of test cases for the microwave oven state diagram. You may assume that the only possible combinations of states and events are included in the state diagram. Be sure to cover all possibilities. Include your state table and test cases in your answer. How many tests are required to fully test the solution?

# SUMMARY:

1. State table:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Full power | Half power | Timer | Number | Door open | Door closed | Start | Timeout | Cancel |
| Waiting | Full power | Half power |  |  |  |  |  |  |  |
| Full power |  | Half power | Set time |  |  |  |  |  |  |
| Half power | Full power |  | Set time |  |  |  |  |  |  |
| Set time |  |  |  | Set time | Disabled | Enabled |  |  |  |
| Disabled |  |  |  |  |  | Enabled |  |  |  |
| Enabled |  |  |  |  |  |  | Operation |  |  |
| Operation |  |  |  |  | Disabled |  |  | Waiting | Waiting |

1. Test Cases:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test ID | State | Command | Action | Next |
| 1 | Waiting | Full power | Set power=600 | Full power |
| 2 | Waiting | Half power | Set power=300 | Half power |
| 3 | Full power | Half power | Set power=300 | Half power |
| 4 | Full power | Timer | Get number | Set time |
| 5 | Half power | Full power | Set power=600 | Full power |
| 6 | Half power | Timer | Get number | Set time |
| 7 | Set time | Number | Exit set time | Set time |
| 8 | Set time | Door open | Display waiting | Disabled |
| 9 | Set time | Door closed | Display ready | Enabled |
| 10 | Disabled | Door closed | Display ready | Enabled |
| 11 | Enabled | Start | Operate oven | o |
| 12 | Operation | Door open | Display waiting | Disabled |
| 13 | Operation | Cancel | Display time | Waiting |
| 14 | Operation | Timeout | Display time | Waiting |

# RESULT:

Number of test cases required to fully test the solution is 63. This come from states times commands: 7 commands \* 9 commands = 63 test cases. 14 out of 63 test cases listed is worthful. Other commands under each states should lead to nothing.