

Shopping Cart Checkout Simulator Black Box Test Plan

Document Author(s): Caitlyn Wiley

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Introduction

These tests test error handling within the program as well as the output of the program given specific cart data. To run the Shopping Cart Checkout Simulator, open eclipse, right click on the project and under Run As choose Java Application.

| Test ID | Description | Expected Results | Actual Results |
|---|---|--|--|
| testRunSimulator (Caitlyn Wiley) | Preconditions: none Run Simulator | Simulator should open and the default number of carts and registers are 100 and 3, respectively. Progress bar is empty and all labels are displayed. | Simulator should open and the default number of carts and registers are 100 and 3, respectively. Progress bar is empty and all labels are displayed. |
| testAddZeroCarts (Caitlyn Wiley) | Preconditions: Test 1 Type "0" for "Number of Shopping Carts" and leave registers at 3 Click Start | A dialog box is displayed saying "There must be at least one cart in the simulation." | A dialog box is displayed saying "There must be at least one cart in the simulation." |
| testAddInvalidCarts (Caitlyn Wiley) | Preconditions: Test 1 Type "five" for "Number of Shopping Carts" and leave registers at 3 Click Start | A dialog box is displayed saying "The number of shopping carts must be an integer." | A dialog box is displayed saying "The number of shopping carts must be an integer." |
| testInvalidNumber OfRegisters (Caitlyn Wiley) | Preconditions: Test 1 Type 3 for "Number of Shopping Carts" Choose 15 registers for "Number of Checkout Registers" Click Start | A dialog box is displayed saying "Number of registers must be between 3 and 12 inclusive." | A dialog box is displayed saying "Number of registers must be between 3 and 12 inclusive." |

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|--|--|---|---|----|---|---|-----|-----------|----|-----|--|--|-----|--|---|
| testValidRegisters AndCarts (Caitlyn Wiley) | <p>Preconditions: Test 1</p> <p>Type “3” for “Number of Shopping Carts” Choose 4 registers for “Number of Checkout Registers”</p> <p>Click Start</p> | The simulator should begin to run with 4 registers (1 express, 2 regular and 1 special) and 3 carts that eventually enter and choose a line. At the end, the avg wait time and checkout time are displayed. | The simulator begins to run with 4 registers (1 express, 2 regular and 1 special) and 3 carts that eventually enter and choose a line. At the end, the avg wait time and checkout time are displayed. | | | | | | | | | | | | |
| Test1Cart3Registers -with cart data given (Caitlyn Wiley) | <p>Run simulation Type “1” for “Number of Shopping Carts” and choose 3 for “Number of Checkout Registers”</p> <p>Click Start</p> <table><tr><td>Express</td><td>21</td><td>37</td></tr></table> | Express | 21 | 37 | <p>Set up of registers should be: Express Regular Special</p> <p>Avg. wait time = 0.00 sec. Avg. checkout time = 37.00 sec.</p> | <p>Three registers are setup (Express, Regular, and Special) Avg. wait time = 0.00 sec. Avg. checkout time = 37.00 sec.</p> | | | | | | | | | |
| Express | 21 | 37 | | | | | | | | | | | | | |
| Test3Carts3Registers -with cart data given (Caitlyn Wiley) | <p>Run simulation Type “3” for “Number of Shopping Carts” and choose 3 for “Number of Checkout Registers”</p> <p>Click Start</p> <table><tr><td>1 Express</td><td>21</td><td>37</td></tr><tr><td>2 Regular</td><td>28</td><td>152</td></tr><tr><td>3 Regular</td><td>53</td><td>135</td></tr></table> | 1 Express | 21 | 37 | 2 Regular | 28 | 152 | 3 Regular | 53 | 135 | <p>Set up of registers should be: Express Regular Special</p> <p>Avg. wait time = 0.00 sec. Avg. checkout time = 108.00 sec.</p> | <p>Three registers are setup (Express, Regular, and Special) Avg. wait time = 0.00 sec. Avg. checkout time = 108.00 sec.</p> | | | |
| 1 Express | 21 | 37 | | | | | | | | | | | | | |
| 2 Regular | 28 | 152 | | | | | | | | | | | | | |
| 3 Regular | 53 | 135 | | | | | | | | | | | | | |
| Test4Carts4Registers -with cart data given (Caitlyn Wiley) | <p>Run simulation Type “4” for “Number of Shopping Carts” and choose 4 for “Number of Checkout Registers”</p> <p>Click Start</p> <table><tr><td>1 Express</td><td>21</td><td>37</td></tr><tr><td>2 Regular</td><td>28</td><td>152</td></tr><tr><td>3 Regular</td><td>53</td><td>135</td></tr><tr><td>4 Special</td><td>80</td><td>414</td></tr></table> | 1 Express | 21 | 37 | 2 Regular | 28 | 152 | 3 Regular | 53 | 135 | 4 Special | 80 | 414 | <p>Set up of registers should be: Express Regular Regular Special</p> <p>Avg. wait time = 0.00 sec. Avg. checkout time = 184.50 sec.</p> | <p>Four registers are setup: Express Regular Regular Special</p> <p>Avg. wait time = 0.00 sec. Avg. checkout time = 184.50 sec.</p> |
| 1 Express | 21 | 37 | | | | | | | | | | | | | |
| 2 Regular | 28 | 152 | | | | | | | | | | | | | |
| 3 Regular | 53 | 135 | | | | | | | | | | | | | |
| 4 Special | 80 | 414 | | | | | | | | | | | | | |
| Test5Carts4Registers -with cart data given (Caitlyn Wiley) | <p>Run simulation Type “5” for “Number of Shopping Carts” and choose 4 for “Number of Checkout Registers”</p> <p>Click Start</p> | <p>Set up of registers should be: Express Regular Regular Special</p> | <p>Four registers are setup: Express Regular Regular Special</p> | | | | | | | | | | | | |

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|--|--|-----|---------|----|----|---|---------|----|-----|---|---------|----|-----|---|---------|----|-----|---|---------|----|-----|---|---|---|-----|---|---------|-----|-----|--|--|
| | <table><tr><td>1</td><td>Express</td><td>21</td><td>37</td></tr><tr><td>2</td><td>Regular</td><td>28</td><td>152</td></tr><tr><td>3</td><td>Regular</td><td>53</td><td>135</td></tr><tr><td>4</td><td>Special</td><td>80</td><td>414</td></tr><tr><td>5</td><td>Regular</td><td>81</td><td>277</td></tr></table> | 1 | Express | 21 | 37 | 2 | Regular | 28 | 152 | 3 | Regular | 53 | 135 | 4 | Special | 80 | 414 | 5 | Regular | 81 | 277 | | <p>Avg. wait time = 19.80 sec. Avg. checkout time = 203.00 sec.</p> | <p>Avg. wait time = 19.80 sec. Avg. checkout time = 203.00 sec.</p> | | | | | | | |
| 1 | Express | 21 | 37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Regular | 28 | 152 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Regular | 53 | 135 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Special | 80 | 414 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Regular | 81 | 277 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Test7Carts7Registers -with cart data given (Caitlyn Wiley) | <p>Run simulation Type “7” for “Number of Shopping Carts” and choose 7 for “Number of Checkout Registers”</p> <p>Click Start</p> <table><tr><td>1</td><td>Express</td><td>21</td><td>37</td></tr><tr><td>2</td><td>Regular</td><td>28</td><td>152</td></tr><tr><td>3</td><td>Regular</td><td>53</td><td>135</td></tr><tr><td>4</td><td>Special</td><td>80</td><td>414</td></tr><tr><td>5</td><td>Regular</td><td>81</td><td>277</td></tr><tr><td>6</td><td>Regular</td><td>105</td><td>246</td></tr><tr><td>7</td><td>Regular</td><td>111</td><td>120</td></tr></table> | 1 | Express | 21 | 37 | 2 | Regular | 28 | 152 | 3 | Regular | 53 | 135 | 4 | Special | 80 | 414 | 5 | Regular | 81 | 277 | 6 | Regular | 105 | 246 | 7 | Regular | 111 | 120 | <p>Set up of registers should be: Express Regular Regular Regular Regular Special Special</p> <p>Avg. wait time = 0.00 sec. Avg. checkout time = 197.29 sec.</p> | <p>Seven registers are setup: Express Regular Regular Regular Regular Regular Special Special</p> <p>Avg. wait time = 0.00 sec. Avg. checkout time = 197.29 sec.</p> |
| 1 | Express | 21 | 37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Regular | 28 | 152 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Regular | 53 | 135 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Special | 80 | 414 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Regular | 81 | 277 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Regular | 105 | 246 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | Regular | 111 | 120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Document Revision History

| Date | Author | Change Description |
|---------|---------------|--|
| 2/9/17 | Caitlyn Wiley | <ul style="list-style-type: none"> Added test cases to check error handling |
| 2/10/17 | Caitlyn Wiley | <ul style="list-style-type: none"> Added test cases using given cart data in project description and calculated expected output |
| 2/27/17 | Caitlyn Wiley | <ul style="list-style-type: none"> Fixed a few expected outputs Added detail to test descriptions |