BLACK BOX TEST PLAN

In this section, you must provide your black-box test plan with at least 5 black-box test cases.

For our black-box test cases, we will use the following test files named highways.txt:

2 0 7.0 77.0

3 2 12.0 122.0

0 3 14.0 144.0

1 0 5.0 101.0

3 1 10.0 66.0

1 2 6.0 55.0

To run the tests:

1. Right click on TransportationManagerUI class in the Package Explorer.
2. Select Run As > Java Application

Test ID	Description	Expected Results	Actual Results
Test 1: **testLoadHighwayInfo** (ECP – Loading highway information from file)	**Preconditions:** • TransportationManager UI has been loaded successfully • Main Menu is the current screen • The file highways_small.txt exists **Steps:** 1. Enter "input/highways_small.txt" in the textfield	Adjacency List button is already selected and displays adjacency list in the textbox. AdjacencyList[	Adjacency List button is already selected and displays adjacency list in the textbox. AdjacencyList[

	2. Select "Minimum Asphalt" 3. Click "Load!" 4. Check results 5. Go back to main menu by clicking on "Go Back to Main Menu"	City 0: -> Highway[city1=0, city2=3, cost=14.0, asphalt=144.0] -> Highway[city1=1, city2=0, cost=5.0, asphalt=101.0] -> Highway[city1=2, city2=0, cost=7.0, asphalt=77.0] City 1: -> Highway[city1=1, city2=0, cost=5.0, asphalt=101.0] -> Highway[city1=1, city2=2, cost=6.0, asphalt=55.0] -> Highway[city1=3, city2=1, cost=10.0, asphalt=66.0] City 2: -> Highway[city1=1, city2=2, cost=6.0, asphalt=55.0] -> Highway[city1=2, city2=0, cost=7.0, asphalt=77.0] -> Highway[city1	City 0: -> Highway[city1=0, city2=3, cost=14.0, asphalt=144.0] -> Highway[city1=1, city2=0, cost=5.0, asphalt=101.0] -> Highway[city1=2, city2=0, cost=7.0, asphalt=77.0] City 1: -> Highway[city1=1, city2=0, cost=5.0, asphalt=101.0] -> Highway[city1=1, city2=2, cost=6.0, asphalt=55.0] -> Highway[city1=3, city2=1, cost=10.0, asphalt=66.0] City 2: -> Highway[city1=1, city2=2, cost=6.0, asphalt=55.0] -> Highway[city1=2, city2=0, cost=7.0, asphalt=77.0] -> Highway[city1

		=3, city2=2, cost=12.0, asphalt=122.0] City 3: -> Highway[city1 =0, city2=3, cost=14.0, asphalt=144.0] -> Highway[city1 =3, city2=1, cost=10.0, asphalt=66.0] -> Highway[city1 =3, city2=2, cost=12.0, asphalt=122.0]]	=3, city2=2, cost=12.0, asphalt=122.0] City 3: -> Highway[city1 =0, city2=3, cost=14.0, asphalt=144.0] -> Highway[city1 =3, city2=1, cost=10.0, asphalt=66.0] -> Highway[city1 =3, city2=2, cost=12.0, asphalt=122.0]]
Test 2: **testLoadNonExistingFile** (DT – Loads a file that does not exist)	**Preconditions:** • TransportationManager UI has been loaded successfully • Main Menu is the current screen • The file highways_small.txt exists • The file invalid.txt does not exist **Steps:** 1. Enter "input/invalid.txt" in the textfield 2. Select "Minimum Cost" button 3. Click "Load!" 4. Check results	The product list displays an error message: "File cannot be opened"	The product list displays an error message: "File cannot be opened"

Test 3: **testGetMinimumCost** (BVA – get the minimum cost of connecting the cities)	**Preconditions:** • Test 2 has passed **Steps:** **1.** Enter "input/highways_small.txt" in the textfield **2.** Select "Minimum Cost" button **3.** Click "Load!" button **4.** Select "Minimum Traversal List" button **5.** Check results	The highways list displays: List[Highway[city1=1, city2=0, cost=5.0, asphalt=101.0], Highway[city1=1, city2=2, cost=6.0, asphalt=55.0], Highway[city1=3, city2=1, cost=10.0, asphalt=66.0]]	The highways list displays: List[Highway[city1=1, city2=0, cost=5.0, asphalt=101.0], Highway[city1=1, city2=2, cost=6.0, asphalt=55.0], Highway[city1=3, city2=1, cost=10.0, asphalt=66.0]]
Test 4: **testGetMinimumAsphalt** (BVA – get the minimum amount of asphalt required to connect the cities)	**Preconditions:** • Test 2 and 3 have passed **Steps:** 1. Click on "Go Back to Main Menu" button 2. Select "Minimum Asphalt" button 3. Click on "Load!" button	The highways list displays: List[Highway[city1=1, city2=2, cost=6.0,	The highways list displays: List[Highway[city1=1, city2=2, cost=6.0,

	4. Click on "Minimum Traversal List" button 5. Check results	asphalt=55.0], Highway[city1=2, city2=0, cost=7.0, asphalt=77.0], Highway[city1=3, city2=1, cost=10.0, asphalt=66.0]]	asphalt=55.0], Highway[city1=2, city2=0, cost=7.0, asphalt=77.0], Highway[city1=3, city2=1, cost=10.0, asphalt=66.0]]
Test 5: **testQuitTransportationManagerUI** (ECP – Close the program)	**Preconditions:** • Tests 1, 2, 3, and 4 have passed **Steps:** 1. Click on "Quit Program" on bottom right corner of current screen. 2. Check results	The program exits successfully.	The program exits successfully.