Test Plan

Final Version



Group B

Todor Tsekov (2228777)

Wen Zhang (2351420)

Jiaqi Ni (2217774)

Yidi Wu (2197301)

Kalina Petrova (2221667)

Jianfei Feng (2204529)

Class: Ei8s1/Ei8s2

Course: Project C-phase

Mentor: Bert Van Gestel

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# Introduction

The purpose of this test-plan is to see whether all functionalities described in the use-cases are working correctly and whether certain undesired actions affect the program’s workflow. Instead of constant warning pop-up when a certain action is not permitted we focused on preventing the user from creating mistakes as much as possible, meaning certain functions will be disabled when they’re not supposed to be accessed.

We will conduct a small test with a handful of testers and conduct a final reconfiguration before the final acceptance test with the client.

# Test Action:

**This test action are based on URS document we already made.**

Scenarios:

* Add crossing.
* Delete crossing.
* Change crossing.
* Rotate crossing.
* Modify traffic Light System.
* Change traffic Light Setup.
* Alter Flow.
* Navigate.
* Play Simulation.
* Pause Simulation.
* Stop Simulation.
* Create New Project.
* Load Project and Statistics.
* Save Project and Statistics.
* Exit Application.
* Go to Main Screen.
* Undo.
* Redo.
* Reset.

# Table explanation:

## Target on screen:

The actual screen commands the user will interact with.

## Test Data/Simulation:

Test our actions under different kinds of conditions and with different kinds of data to check if we have captured all the exceptions and if we take necessary precautions to prevent the action from crashing.

## Expected Result:

What is the expected result in each different case we ran the test.

## Actual Result:

The actual result that occurred during the test.

## Outcome and actions required:

Compare the Expected results and the actual results to come to conclusions what kind of actions are to be taken to fix the inaccuracies.

# Test Tables:

| No. | Test Name | Pre-Condition | Target on screen | Test Data/Simulation | Expected Result | Actual Result | Outcome and Actions required | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. | Load Project | A project “Load project” has been created beforehand. Cell B2 will be occupied with crossing Type A and cell B3 will be occupied with crossing Type B. | Main screen -> Load Project option | 1. User Opens Application and clicks the “Load Project” option. Then find and chooses to open the  “Load project” file. | 1. Premade project “Load project” is loaded, and Cell B2 will be occupied with crossing Type A, cell B3 will be occupied with crossing Type B. |  | |  |
| 2. | Add crossing | 1. Test case “Load Project” has been successfully tested.  2. Premade project “Add crossing” is loaded, and Cell B2 will be occupied with crossing Type A, cell B3 will be occupied with crossing Type B. | User chooses crossing -> user drags a crossing to a cell-> User drops the crossing | 1. User chooses a crossing Type A, by left clicking the mouse, and then drags it to a cell (cellB4).  2. User chooses a crossing Type B by left clicking the mouse, and then drags it to a cell (cellB3).  3. User chooses a crossing Type B, by left clicking the mouse, and then drag it to a cell (cellC4).  4. User chooses a crossing Type B, by left clicking the mouse, and then drag it to a cell (cellC4).  5. User clicks the “run” button and tries steps 1-4. | 1. A crossing with Type A shows in cell B4.  2. Systems give an error message “cell occupied”. Cell B3 does not change.  3. A crossing with Type B shows in cell C4.  4. Systems give an error message “cell occupied”. Cell B4 does not change.  5. All the previous steps will be disabled, so the user will not be able to do that. |  | |  |
| 3. | Delete crossing | 1. Test case “Load Project” has been successfully tested.  2. Premade project “Delete crossing” is loaded , and Cell B2 will be occupied with crossing Type A, cell B3 will be occupied with crossing Type B. | User right click on a crossing -> Choose the “Delete crossing” option-> confirm deletion. | 1. User right clicks in cell B2.  2. Chooses “Delete crossing option”.  2.1 User confirms deletion  2.2 User cancels deletion  3. User right clicks on cell B4. | 1. The system shows a delete option.  2. System will ask for confirmation “Do you really wish to delete?”  2.1 System will remove crossing from the grid  2.2 Nothing changes  3. Nothing will appear |  | |  |
| 4. | Change crossing | 1. Test case “Load Project” has been successfully tested.  2. Premade project “Change crossing” is loaded , and Cell B2 will be occupied with crossing Type A, cell B3 will be occupied with crossing Type B. | Right click on a crossing -> “change a crossing” option -> choose a new crossing -> set the traffic light options | 1. Right click on cell B2 (with crossing) then choose “Change crossing” option. Choose crossing type B. 2. Right click on cell C4 (without crossing). Choose “Change crossing” option. 3. Start simulation. Right click on any cell. 4. Pause simulation. Right click on any cell. 5. Stop simulation. Right click on cell B2. | 1. Crossing on B2 has now changed (From A to B) 2. No such option should be available to user. 3. Nothing happens and no options pop up. 4. Nothing happens and no options pop up. |  | |  |
| 5. | Rotate crossing | 1. Test case “Load Project” has been successfully tested.  2. Premade project “Rotate crossing” is loaded , and Cell B2 will be occupied with crossing Type A, cell B3 will be occupied with crossing Type B. | Grid->Crossing->Right click menu->Rotate | 1. Right click on cell B2 then choose rotate crossing option. 2. Right click on cell C4 then choose rotate crossing option. 3. Start simulation. Right click on any cell. 4. Pause simulation. Right click on any cell. 5. Stop simulation. Right click on cell B3. Choose rotate crossing option | 1. Crossing on B2 now has rotated 90 degrees clockwise. 2. No such option should be available to user 3. Nothing happens and no options pop out 4. No Nothing happens and no options pop out 5. The crossing on B3 now has rotated 90 degrees clockwise |  | |  |
| 6. | Modify traffic light | Test case “Load Project” has been successfully tested.  2. Premade project “Rotate crossing” is loaded , and Cell B2 will be occupied with crossing Type A, cell B3 will be occupied with crossing Type B. | Grid->Hover over a crossing->click left corner output icon->setting window | 1. Hover over cell B2 Click icon on top left corner. Change interval for state 1 to 40. 2. Hover over cell B2. Click icon on top left corner. Change interval for state 2 to 1000 3. Hover over cell C4 (without crossing) 4. Play simulation. Hover over cell B2 (with crossing). 5. Pause simulation. Hover over cell B2 (with crossing). 6. Stop simulation. Hover over cell B2 (with crossing) click icon on top left corner. Change interval for state 1 to 30. | 1. State 1 for the traffic light system on cell B2 now has interval of 40 seconds. 2. System shows pop-up “Interval too high. Possible values 20-60”. System doesn’t change interval. 3. No icon should appear in the top left corner. 4. No icon should appear in the top left corner. 5. No icon should appear in the top left corner. 6. State 1 for the traffic light system on cell B2 now has interval of 30 seconds. |  | |  |
| 7. | Change traffic light setup | Test case “Load Project” has been successfully tested.  2. Premade project “Rotate crossing” is loaded, and Cell B2 will be occupied with crossing Type A and traffic light setup 1, cell B3 will be occupied with crossing Type B and traffic light setup 2. | Right click crossing -> “Change traffic light setup” option -> List of possible options to change from | 1. Right click on cell B2. Choose Change traffic light setup option. Choose a traffic light setup 2. 2. Right click on cell C4. Choose “Change traffic light setup” option. 3. Start simulation. Right click on any crossing. 4. Pause Simulation. Right click on any crossing. 5. Stop Simulation. Right click on cell B3. Choose Change traffic light setup option. Choose traffic light setup 1. | 1. The crossing on cell B2 now has a different setup for the stages of the traffic light. (From 1 to 2.) 2. No such option should appear to the user. 3. No options should appear. 4. No options should appear. 5. The crossing on cell B2 now has a different setup for the stages of the traffic light. (From 2 to 1). |  | |  |
| 8. | Alter Flow |  |  |  |  |  | |  |
| 9. | Navigate |  | Project-grid screen->Navigation button | 1. When simulation is not running or paused and crossings are existing on grid. 2. When simulation is not running or paused and crossings are not existing on grid. 3. When simulation is running. | 1. Navigation button is unavailable for users 2. Navigation button is unavailable for users 3. User clicks the navigation start point button, then user selects start point ,then clicks the destination point button and selects end point and input the flow numbers, click confirm button and the data saved or back to default value. After save value, system calculates the new data. |  | |  |
| 10. | Play Simulation |  | Project-grid screen ->Play simulation | 1. When simulation is not running or paused and crossings are existing on grid. 2. When simulation is not running or paused and crossings are not existing on grid. 3. When simulation is running. | 1. 1 There’re crossing already on grid and connect to each other. User click Navigate button which in tool panel. After that system asking user to choose two points on crossings. Suggested begin point and end point will show on the map. User can make decision for navigate route. After setting done, cars flow will go through from begin point to end point.  1.2 If there’s no crossing connect to each other, navigate button is not available.  2. Navigate button is not available.  3. Navigate button is not available. |  | |  |
| 11. | Play Simulation |  | Project-grid screen ->Play simulation button | 1. When simulation is already running. 2. When user didn’t set start point and end point or he didn’t placed at least to crossings connected to each other on the grid 3. When the simulation is paused. | 1. Play simulation button become pause simulation button, it can only achieve pause function. 2. User click the play simulation button the system will show an appropriate message. 3. 3. Play simulation button is available for user to resume simulation. |  | |  |
| 10. | Pause Simulation |  | Power-grid screen->Pause button. | 1. When simulation is running. 2. When simulation is NOT running. | 1. The pause button appears on the place of the start button. The user clicks the pause button, the simulation is paused. The paused button changes to play button again. 2. User will not see the pause button and cannot press it. |  | |  |
| 11. | Stop Simulation |  | Power-grid screen->Stop button. | 1. When simulation is running or it is paused. 2. When simulation is not running. | 1. User is presses the Stop button .The simulation stops, the user can make changes to the grid again. 2. The stop button is disabled. |  | |  |
| 12. | Create new project |  | User goes to Main-Screen  ->user clicks new button | 1. When the user starts the application. The user open the project and is in the Main-Screen and clicks new button. 2. The user is at Project-grid screen, the user clicks main menu icon and a pop-up menu appears. The user chooses the Create a new project option. 3. The user is working on a file and the user is at Project-grid screen, the user clicks main menu icon and a pop-up menu appears. The user chooses the Create a new project option. | 1. The new file is created and the user will be at the Project-grid screen. 2. The new file is created and shown in the Project-grid screen. 3. A pop-up message will be shown that asks user wants to save the existing file or not. After closing the existing file, the user clicks main menu icon and a pop-up menu appears. The user chooses the Create a new project option. |  | |  |
| 13. | Load project and statistics |  | User goes to Main-Screen  ->user clicks load button | 1. When the user starts the application. The user open the project and is in the Main-Screen and clicks load button. 2. The user is at Project-grid screen, the user clicks main menu icon and a pop-up menu appears. The user chooses the Open a new project option. 3. The user is working on a file and the user is at Project-grid screen, the user clicks main menu icon and a pop-up menu appears. The user chooses the Open a new project option. | 1. The file is loaded, the system is at Project-grid screen. 2. The file is loaded, the system is at Project-grid screen. 3. A pop-up message will be shown that asks user wants to save the existing file or not. After closing the existing file, the user clicks main menu icon and a pop-up menu appears. The user chooses the Open a new project option. |  | |  |
| 14. | Save project and statistics |  | Power-grid screen->File->save button | 1. 1 .When simulation is not running or paused and crossings are existing on grid. 2. When simulation is not running or paused and crossings are not existing on grid. 3. When simulation is running. | * 1. If user has already simulated it, grid project and statistics will be saved to default location.   2. If user has not simulated it yet, grid project can be saved and statistics will be saved to an empty txt file.   2. Save button is not available.  3. Save button is not available. |  | |  |
| 15. | Exit Application |  | Power-grid screen->File->close button | 1. The user clicks close button and the simulation stops and is already save by user. 2. The user clicks close button and the simulation stops and is not saved yet. 3. The user clicks close button and the simulation is still running. 4. The user clicks close button and the simulation is still paused. | 1. The project is closed. 2. A message shows to notify user that his project has not been saved. Asks user if he’d like to save. 3. The button is disabled. A warning message will be shown that the file is still running. 4. A message shows to ask the user if he’d like to stop the simulation. If the user chooses to stop the simulation and clicks the stop button. A message shows to notify user that his project has not been saved. Asks user if he’d like to save. |  | |  |
| 16. | Go to main menu |  | File -> Go to “main menu” | 1. The simulation stops and is saved already. 2. The simulation stops and is not saved. 3. The simulation is paused. 4. The simulation is running. | 1. User is automatically redirected to the “Main Menu” screen. 2. A message shows to notify user that his project has not been saved. Asks user if he’d like to save. 3. A message shows to ask the user if he’d like to stop the simulation. If the user chooses to go to main menu, the simulation and clicks the stop button. A message shows to notify user that his project has not been saved. Asks user if he’d like to save. 4. The button is disabled. A warning message will be shown that the file is still running. |  | |  |
| 17. | Undo |  | Click Undo button | 1. Start the application and click undo button. 2. Add 1 crossing into cell 2B, then click button undo. 3. Add 1 crossing into cell 2C and start the simulation then click button undo. 4. Stop the simulation then click the button undo. | 1. The button should be disabled, so the user should not be able to click the redo button. 2. The system will remove the crossing in the cell 2B. 3. The button should be disabled, so the user should not be able to click the redo button while the simulation is running. 4. The system will remove the crossing in the cell 2C. |  | |  |
| 18. | Redo |  | Click Redo button | 1. Start the application and click the redo button. 2. Adding a crossing to the cell 2B, and then click the redo button. 3. Adding a crossing to cell 2B, and then click the undo button, then click the redo button. 4. Adding crossings to cell 2B, 3B and 3C, and then click the undo button, then click start button, then click the redo button. 5. Adding crossings to cell 2B, 3B and 3C, and then click the undo button, then click start button, after a while, click the stop button, then click the redo button. | 1. The button should be disabled, so the user should not be able to click the redo button. 2. Same as 1. 3. The system should show the crossing in 2B again. 4. The button should be disabled, so the user should not be able to click the redo button while the system is running. 5. After clicking the undo button, the system should remove the crossing in the cell 3C, after clicking the redo button, the system should add the crossing back to the cell 3C. |  | |  |
| 19. | Reset |  | Click Reset button | 1. Start the application and click the reset button. 2. Add some crossings and click the reset button. 3. Add some crossings successfully and set the traffic light setting then click the reset button. 4. Add some crossings successfully and set the traffic lights then start simulation, then click reset button. 5. Add some crossings successfully and set the traffic lights then start simulation, after a while, stop it, then click reset button. | 1. System should give you a proper message indicating that the application is reset. 2. System should remove all the crossing in the grid and give you a proper message indicating that the application is reset. 3. Same as 2. 4. System will give you an error message indicating that it is not possible to reset the application while it is running the simulation. 5. Same as 2. |  | |  |