Test Plan

Final Version



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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 content:

## Purpose:

Explains what the purpose of the taken test is. In our case we want to check if we can redirect our user to the main menu screen under certain conditions.

## 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 | Target on screen | Test Data/Simulation | Expected Result | Actual Result | Outcome and Actions required | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Load project | 1. user clicks “Load” -> user choose project “testLoading” | 1. User clicks “Load” button and choose to load project “testLoading”. | 1. premade project test1 is loaded, and Cell 2B will be occupied with crossing Type A, cell 3B will be occupied with crossing Type B. |  | |  |
| 2. | Add crossing  (Precondition: test “Load project” is successfully tested.) | 1. User clicks “Load” -> user choose project “testAddingCrossing”.  2. User chooses a crossing🡪user drags a crossing to a cell🡪user drop the crossing. | 1. project “testAddingCrossing” is loaded.  2.1 User chooses a crossing Type A, by left clicking the mouse, and then drag it to a cell (cell4B).  2.2 User chooses a crossing Type B by left clicking the mouse, and then drag it to a cell (cell3B).  3.1 User chooses a crossing Type B, by left clicking the mouse, and then drag it to a cell (cell4C).  3.2 User chooses a crossing Type B, by left clicking the mouse, and then drag it to a cell (cell4C).  4. User clicks the “run” button and does the steps 1,2 and 3 again. | 1. Premade project test1 is loaded, and Cell 2B will be occupied with crossing Type A, cell 3B will be occupied with crossing Type B.  2.1 A crossing with Type A shows in cell 4B.  2.2 systems give an error message “cell occupied”. Cell 3B does not change.  3.1 A crossing with Type B shows in cell 4C.  3.2 systems give an error message “cell occupied”. Cell 4B does not change.  4. All the previous steps will be disabled, so the user will not be able to do that. |  | |  |
| 3. | Delete crossing  (Precondition: test “Load project” is successfully tested.) | 1. User clicks “Load” -> user choose project “testDeletingCrossing”.  2.User right click on a crossing (cell 2B)🡪choose the “delete crossing”🡪confirm deletion  2.User right click on a crossing (cell 4B)🡪choose the “delete crossing”🡪confirm deletion | 1. project “testDeletingCrossing” is loaded.  2. user right click on cell 2B .  2.1 the user clicks delete option.  2.1.1 user confirms the deletion.  2.1.2 user cancels the deletion.  3. user right click on cell 4B. | 1. Premade project test1 is loaded, and Cell 2B will be occupied with crossing Type A, cell 3B will be occupied with crossing Type B.  2. the system will show you an delete option.  2.1 the system will show you a message ”do you really want to dele the crossing?”.  2.1.1 the crossing in cell 2B is deleted.  2.1.2 the crossing in cell 2B is still there.  3. the system does not do anything. |  | |  |
| 3. | Change crossing  (Precondition: test “Load project” is successfully tested.) | User right click on a crossing 🡪choose the “change a crossing” option🡪choose a new crossing🡪set the traffic light options🡪system changes the crossing. | 1. When simulation is running or paused. 2. User right clicks a cell with a crossing, for example B3 and chooses the option “Change crossing”(the simulations is not running and it is not in pause state) 3. User right clicks a blank cell, for example C4 (the simulations is not running and it is not in pause state) 4. User gives up the operation halfway. | 1. The grid options are unavailable. 2. System will show the option panel o you can choose a new crossing. 3. System will show nothing. 4. System cancels the operation and gives a proper message. |  | |  |
| 4. | Rotate crossing | Grid->Crossing->Right click menu->Rotate | 1. Right click on cell B2 (with crossing) then choose rotate crossing option. 2. Right click on cell C4 (without crossing) 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 B2 (with crossing). 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 B2 now has rotated 90 degrees clockwise |  | |  |
| 5. | Modify traffic light | Hover over a crossing->click left corner output icon->setting window | 1. Hover over cell B2 (with crossing) Click icon on top left corner. Change interval for state 1 to 40. 2. Hover over cell B2 (with crossing) 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. Interval won’t change as indicated change is too high. 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. |  | |  |
| 6. | Change traffic light setup |  | 1. Right click on cell B2 (with crossing). Choose Change traffic light setup option. Choose a traffic light setup to replace existing one. 2. Right click on cell C4 (without crossing). 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 B2 (with crossing). Choose Change traffic light setup option. Choose a traffic light setup to replace existing one. | 1. The crossing on cell B2 now has a different setup for the stages of the traffic light. 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. |  | |  |
| 7. | Navigate  (Precondition: test “Load project” is successfully tested.) | 1. User clicks “Load” -> user choose project “testNavigate”.  2. Project-grid screen->Navigation button | 1. When simulation is not running or paused and crossings are existing on grid. User clicks the navigation button, then user gives start point on a crossing lane ,then end point on another or same crossing lane and input the flow numbers, click confirm button 2. When simulation is not running or paused and crossings are not existing on grid.   3. When simulation is running. | 1. A proper message shows up. (“Set up Navigate successfully!”) 2. Navigation button is unavailable for tester 3. Navigation button is unavailable for tester |  | |  |
| 8. | 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. |  | |  |
| 9. | 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  (Precondition: test “Load project” is successfully tested.) | 1. User clicks “Load” -> user choose project “testSaveProject”.  2. Power-grid screen->File->save button | 1. Running simulation for the current map. After a while, save project. 2. Running simulation for the current map. After a while, stop simulation and save project. 3. Running simulation for the current map. After a while, pause simulation and save project. | 1. Save project button is not enable.  2. The current map and statistics will be saved to default result folder.  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. |  | |  |
| 20 | Alter Flow  (Precondition: test “Load project” is successfully tested.) |  | 1. When simulation is not running or paused and crossings are existing on grid. User try to modify flow for a certain crossing.  2．When simulation is not running or paused and crossings are not existing on grid. User choose an empty cell.  3. When simulation is running and no matter crossings exist or not. Tester right-click on the grid. | 1. Alter flow window shows up and default values are already there. User modify a lane by changing the value of flow. After confirm it, change will successful.  2. The right-click menu will not appear.  3. User cannot see the right-click menu no matter on which cell he clicks. |  | |  |