Test Plan

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| **Test №** | **Test name** | **Expectations** | **Result** | **Description** |
| 1. | Open/Load | Loads the selected simulation file of the user on the application. |  |  |
| 2. | Save crossing | Save the selected simulation file of the user. |  |  |
| 3. | Increase traffic | Increase the traffic of all crossings of the exact simulation. |  |  |
| 4. | Decrease traffic | Decrease the traffic of all crossings of the exact simulation. (Minimum of 1 car per side on the crossing/s) |  |  |
| 5. | Change state of traffic light | Change the state of the traffic light via a sensor button. |  |  |
| 6. | Insert/Add Crossing | Insert crossing on the simulation screen. |  |  |
| 7. | Remove Crossing | Removes the desired crossing from the simulation screen. |  |  |
| 8. | Adjust Green Time of traffic light | Changes the green time of the traffic light to the selected value |  |  |
| 9. | Adjust Green Time of the traffic light with no components | Should not be able to do that, this option should be invisible in this case |  |  |
| 10. | Insert/Add Crossing when there are already 12 crossings on the screen | Error message is being displayed which states that the maximum number of crossings is reached |  |  |
| 11. | Start the simulation via the start button with no components | Error message is being displayed which states that it cannot be started due to lack of components (min 1 crossing) |  |  |
| 12. | Start simulation via the start button with few components already added | Car objects should start moving and stop/go on red/green traffic lights respectively |  |  |
| 13. | Open/Load non-simulation file | Error message is being displayed. |  |  |
| 14. | Click on multiple sensor buttons | States of traffic lights should be changed one by one starting with the traffic light of the first sensor clicked. |  |  |
| 15. | Increase/Decrease traffic simulation with no components | Error message is being displayed stating that there are no crossings to put the traffic on. |  |  |
| 16. | Insert/Add Crossing on another crossing | Error message is being displayed stating that crossings cannot overlap. |  |  |

**Combined Test Cases:**

1. **Test case description: A combination of two test cases (**Increase traffic / Decrease Traffic**)**

**Preconditions: Application is opened, Crossroad/s is placed.**

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| Step No. | Step description | Test data | Expected result |
| 1. | User inputs the maximum traffic amount in the Traffic text box |  | None |
| 2. | User presses the Start Simulation button |  | Simulation starts and cars are according to the amount set by the User |
| 3. | User presses the Stop Simulation button |  | Simulation is stopped |
| 4. | User inputs the minimum traffic amount in the Traffic text box |  | None |
| 5. | User presses the Start Simulation button |  | Simulation starts and cars are according to the amount set by the User |

1. **Test case description: A combination of two test cases (**Add Crossing / Add Crossing on top of the same crossing**)**

**Preconditions: Application is opened.**

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| --- | --- | --- | --- |
| Step No. | Step description | Test data | Expected result |
| 1. | User clicks on the position where you want a crossing to be placed |  | A form with a choice of two crossings appear |
| 2. | User clicks on the crossing desired to be placed |  | Crossing of the desired type is placed on the grid position chosen earlier by the User |
| 3. | User same position where a crossing is already placed |  | A form with a choice of two crossings appear |
| 2. | User clicks on the crossing desired to be placed |  | Crossing of the desired type is placed on the grid position chosen earlier by the User |
| 3. | User presses the Start Simulation button |  | Simulation is stopped |
| 4. | Input the traffic amount desired in the Traffic text box |  | None |
| 5. | User presses the Start Simulation button |  | Simulation starts and cars are according to the amount set by the User |