

Instructions for playing the Game

User ID: Please fill in the textbox with the user Id given to you. You need not fill in every time you play the game until you refresh the webpage.

PassCode: Fill in the textbox provided for the passcode with the passcode given to you. You need not fill in every time you play the game until you refresh the webpage.

Upon submitting the UserID and PassCode the Select Scenario button gets activated.

Select Scenario: The **Select Scenario** button selects the scenario that is selected by you from the drop down menu provided in the game.

Upon pressing the Select Scenario button the **Start the Green** button is activated

Start the Green: By pressing this button the traffic stream starts.

The counter starts to tick down from 40 seconds to 0 seconds. This time is the green extension time. This is the countdown timer between which you should find the appropriate time to end the green.

Stop the Green: The player can press this button to give the traffic the yellow signal and end the green time. This is to be done before the counter comes down to 0 in order to find out the player's score i.e, the player hazard value of the traffic and compare it with the Least Hazard value for the traffic scenario.

Hazard Value: This value is the hazard value for the traffic the instant the player gives the yellow signal to the traffic. (Below you will find how the hazard value is calculated in the game).

Least Hazard Value: This field shows the least possible hazard value for the scenario the player has selected.

Time to least hazard Value: This field shows the counter time at the player can end the green so that the player can get least hazard value.

Note: For least hazard value of 0 there may be more than one occurrence, the time to least hazard value field gives the counter time for the first possible 0 hazard value.

Clear the Screen: This button clears the traffic on the approach and activates the **Select Scenario** button for the player to select the scenario he/she wishes.

Concept:

Hazard Value is a function of number of vehicles caught in the dilemma zone and green extension time. Hazard value= $f(\text{vehicles in Dilemma Zone, Green Extension Phase time})$ per cycle length.

To aggregate the value per hour the equation is multiplied with 3600. So the mathematical representation of the equation is

$$\text{HazardValue} = \frac{3600 * \text{Number of Vehicles in the Dilemma Zone}}{\text{Cross Street green time} + \text{Minimum green time} + \text{Green phase extension time}}$$

In the game the cross street green time is taken to be 30 seconds and minimum green time is 15 seconds to the major street.

The Signal indications indicate the signal that is being showed to the traffic.

The vehicles which turn red after the green is ended are the vehicles which are caught in the dilemma zone and the vehicles which are green are the in the safe zone.

Time to Intersection (TTI) for each car is calculated by

$$TTI = \frac{\text{Distance to the intersection}}{\text{Speed of the car}}$$