

# **Design Document**

City Traffic Simulation Software Solution

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# Class Description

## **Car:**

The car class is the main class in our application. A car has a location. Which is a point, and a destination. The destination can be left, straight or right. The cars in this case will be generated using the method Draw which draws a rectangle as a car on a given location. Cars will be able to move from their location to some other destination. Cars use the lane, by this we mean cars can be in lane or not. In other words, the cars

## **Traffic Light:**

Traffic light class, a traffic light has a point, that is the location, a duration during which the light can shine, The light can be green which means that the car can pass across the crossing, also the traffic light can be in lane or not. That is lane in. The traffic light is created using the Drawing method from the System.Drawing namespace. The light can also be made red. Which indicates that no car should go over the crossing point.

## **Grid:**

Grid divides the panel into equal cells in which we can put our crossings in. It also serves as a class to enable car flow from particular direction.

## **Cell:**

Cell class serves to determine which cell is occupied in the whole grid, meaning, to determine in which cell we can put the crossings in. It has properties such as location, to determine which cell we are talking about, a property that tells us whether cell is taken or not and crossing to know if the crossing was put into one of the cells.

## **Crossing:**

Crossing serves to initialize whole crossings and cars on it, as well as traffic lights (and pedestrians). Besides that, it also controls car flow, meaning it determines how a car steers right, left or keeps going straight.

**Lane:** The lane represent where the cars actually moves. Alane therefor have a list of cars, height, width and direction and also end points location and the end of the lane and beside the location of the lane. The height and the width of the lane helps us to defined the boundaries of the lane.

The lane can also have and end of lane and a stop point.

Cars are the for move across the the lane on which the belong to .

## Class Diagram:

