**Report on how the Car’s initial speed, Initial distance to the intersection, duration of the yellow light, intersection’s width, magnitude of car’s constant positive acceleration (at accelerated motion) magnitude of car’s constant negative acceleration (at decelerated motion) effect on the decision whether car will accelerate to pass the cross road or to stop.**

**All the experiments are done on Mitsubishi Pajero io car.**

**Experiment 0, 0\_1, 0\_2.** When we take all the parameters minimal, then the car needs to stop as it cannot manage to pass the cross-road. If the car’s constant positive acceleration becomes from 1 m/ to 2 m/ then car again cannot accelerate to pass the cross-road, even if the constant positive acceleration is maximal, that is 3 m/ then car again cannot pass the road, with other parameters having their minimal values. With the same conditions but max and min speed check included car cannot pass the cross-road.

**Experiment 1, 1\_1, 1\_2.** When the constant positive acceleration of the car is 3 m/ and the initial speed is 80 km/h (Maximal speed), then car again cannot pass the cross-road, with other parameters having minimal value. It is enough to make yellow light duration 3.53s and car could pass the cross-road but when considering the maximal speed and minimal speed limitation then car cannot pass the cross-road. When 2 cars with the same parameters are considered except one being 10m at the back of the other, then the first car is going to pass the cross-road and the second car needs to stop. When considering 2 cars with 1 having minimal parameters and the other one having the constant positive acceleration of 3 m/ and the initial speed of 80 km/h (Maximal speed) with the road parameters having minimal values, then car at the back cannot pass the cross-road, however car at the front can.

**Experiment 2, 2\_1, 2\_2.** When all the parameters have their maximal value then, the car again cannot pass the cross-road. When all the parameters of the car are maximal then the yellow light duration 5s with the intersection width minimal (5m) then the car again cannot pass the cross road. When we consider the same car but with max/min speed limitation then car again cannot pass the cross-road. When we consider 2 cars with all the parameters maximal and the car at the back being 10m away from the car at the front then 2 cars are going to have a crush. Even when the car at the back is 100m away from the car at the front then they again are going to have a crush.