

Functional Requirements:

1) There are three traffic lights one for secondary road and two for the main road for two lanes.

1) Initially, resetting the traffic light

- In this section the initial time will follow the following rules:

```
if(time is initialized once){
    if((time=30-time)==30){
        time=0 second;
    }
    else{
        time=(30-time)+time
    }
}
else{
    time=0 second;
}
```

2) Detecting a car on the secondary road if it happens then we will consider the time as a decision mode and if it is yes then we will trigger the traffic light for the car to make it pass.

3) timer will be counted after each car pass the road by deducting 10 second from the main time frame and continue the loop to see if there is any car in the queue or not?

Non-Functional Requirements:

1) Maintaining Safety Issue: The traffic light simulation has been dependent on the time. This ensures that the main road light will never be the same as the secondary road. It actually helps to reduce the accident.

2) Performance Testing: To maintain the performance such as readability etc. we have considered most of the conditions by observing from different aspects.