**CarND Path Planning Project**

In this project I get our localization data from simulator using websockets.

Simulator is providing x, y, s, d, yaw and speed for cars. Apart from this JSON also has previous path and sensor fusion data.

First task:

Define a path that the car will visit sequentially every .02 seconds

* Two vectors **next\_x\_vals** and **next\_y\_vals** are used to save the points.
* I declared two variables lane and ref velocity that is kept at 49.5 as 50 is the limit.
* Set prev\_size variable from previous\_path that is coming from simulator.
* First I created a list widely spaced x, y points **ptsx** and **ptsy**
* Then I declared reference starting variables ref\_x, ref\_y and ref\_yaw. These are either where car is or end of previous path
* If previous path is almost empty, I have used car as starting reference
* Use two points that make the path tangent to the previous path end point
* In frenet I evenly added 30m spaced points ahead of the starting reference
* Then I shifted car reference angle to 0 degrees
* Saved all previous points from last time
* Calculated how to break up spline points so that car travels at desired ref velocity
* Then I filled up the rest of the points in planner