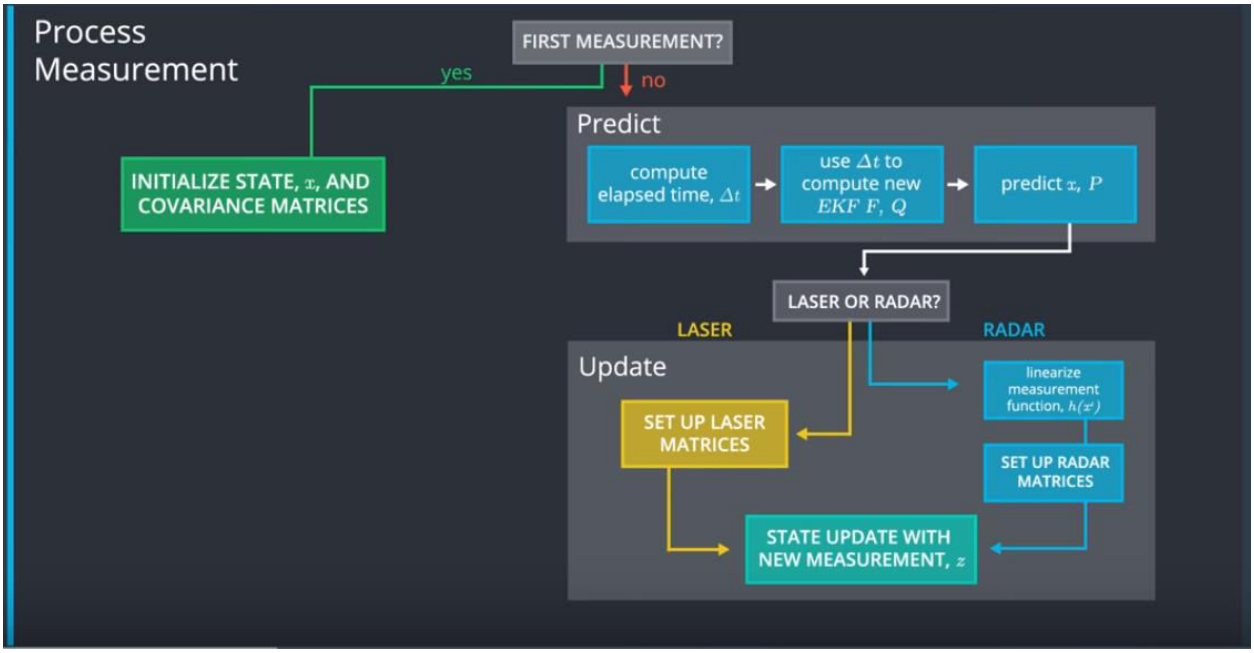
Extended Kalman Filter



The code used in src folder is explained.

FusionEKF.cpp: All the matrixes are initialized in here.

R matrix which is a covariance matrix for laser and radar are initialized.

H matrix for laser is initialized. For radar it is calculated using Jacobean matrix.

The P matrix which is the covariance matrix for x with 4 values is a 4*4 matrix.

The first measurements were initialized.

The predict function is called.

Then based on radar or lidar, The update function is called.

FusionEKF.h: The header file for all functions used inside FusionEKF.cpp

kalman_filter.cpp: This is where the prediction and update of the values of X and P are done.

The Update function based on radar or Lidar is called.

Tools.cpp: The Root mean square and H radar Jacobean matrix are called in here.

Main.cpp: It is where the measurement values are obtained and other functions are further called.

The above is explanation of code used.

The Flow of the concept is:

1. Initialize the values of matrix X with px,py,vx and vy values
2. Initialize the value of Matrix P
3. Calculate the value of Q and F based on dt
4. If LIDAR use the H 2*4 H matrix and R matrix as 2*2
5. If RADAR use the Jacobean H matrix and R matrix as 3*3
6. Call the update function
7. Repeat this till the measurements are flown