OBJECT DETECTION

In this task, an image of a car is used to detect the license plate during a particular time of the day and at particular weather

In [3]:
```
# import the necessaryl libraries for detection

import cv2
import matplotlib.pyplot as plt
import numpy as np
%matplotlib inline
```

In [4]:
```
# Reading the image from the folder

img = cv2.imread('C:/Users/saket/OneDrive/Desktop/Computer-Vision-with-Python/DATA/car_plate.jpg')
```

In [5]:
```
# function to read and display image using matplotlib

def display(img):
    fig = plt.figure(figsize=(10,8))
    ax = fig.add_subplot(111)
    new_img = cv2.cvtColor(img, cv2.COLOR_BGR2RGB)
    ax.imshow(new_img)
display(img)
```

In [6]:
```
# A Cascade Classifier is used for objection detection

plate_cascade = cv2.CascadeClassifier('C:/Users/saket/OneDrive/Desktop/Computer-Vision-with-Python/DATA/haarcascades/haarcascade_russian_plate_number.xml')
```

In [7]:
```
# The license plate is detected using the following function and a rectange is drawn around it

def detect_plate(img):


    plate_img = img.copy()

    plate_rects = plate_cascade.detectMultiScale(plate_img,scaleFactor=1.3, minNeighbors=3)

    for (x,y,w,h) in plate_rects:
        cv2.rectangle(plate_img, (x,y), (x+w,y+h), (0,0,255), 4)

    return plate_img

result = detect_plate(img)
display(result)
plt.savefig('car.jpg')
```

In [ ]: