# **PROBLEM STATEMENT + INTRODUCTION :**

To design a car parking assistant with respect to the number of slots available. Basically the overall working of this project is like that two ultrasonic sensor attached are used for detection of the object so that barrier movement can be set accordingly to it for entering and leaving of the vehicle at gate. While LCD’s pins are attach accordingly and coded with proper check conditions to display relevant message for entering , leaving and slots available , moreover , if all slots are full the won’t go up for the object wanting to enter the area , but will move up for car leaving.

# **DESIGN:**

COMPONENTS (for working logic) :

1. ARDUINO BOARD
2. BREAD BOARD
3. 2 ULTRASONIC SENSOR
4. I2C SENSOR
5. 16 x 2 LCD
6. SERVO MOTOR

PROCEDURE :

The I2C sensor is connected to the 16x2 LCD display to minimize the data pins of LCD to be connected to the arduino and to combine the data pins of the LCD . The Voltage and the ground of all the components ae connected to the breadboard which is connected to the arduino board . Now the Ultrasonic sensors in connection with the arduino board work with the code given later on to serve as calculate the distance between objects and sensor(s).

And the servo motor is also connected to the arduino board which receives instructions from the sensor(s) . Now when the object enter the vicinity of the sensor of around 20cm the sensor pass the instruction to lift the barrier through the servo motor and reduce the available slots , once all the slots have been filled , the barrier won’t move up unless an object passes the other sensor which is determined to detect if an object leaves the parking space and increase number of slots available and shows relevant messages of entrance and leaving on LCD , while normally the LCD will display the number of slots available.

# **CIRCUIT DIAGRAM:**

