**TASK 1**

**Parking System**

#include <LiquidCrystal.h>

LiquidCrystal lcd(12, 11, 5, 4, 3, 2);

#define t1 10

#define t2 9

#define t3 8

int distanceThreshold = 100;

void setup() {

lcd.begin(16,2);

lcd.setCursor(0,0);

Serial.begin (9600);

}

long readDistance(int triggerPin, int echoPin)

{

pinMode(triggerPin, OUTPUT);

digitalWrite(triggerPin, LOW);

delayMicroseconds(2);

digitalWrite(triggerPin, HIGH);

delayMicroseconds(10);

digitalWrite(triggerPin, LOW);

pinMode(echoPin, INPUT);

return pulseIn(echoPin, HIGH);

}

void loop()

{

float d1 = 0.01723 \* readDistance(t1, t1);

float d2 = 0.01723 \* readDistance(t2, t2);

float d3 = 0.01723 \* readDistance(t3, t3);

Serial.println("d1 = " + String(d1) + "cm");

Serial.println("d2 = " + String(d2) + "cm");

Serial.println("d3 = " + String(d3) + "cm");

if (d1>100 & d2>100 & d3>100){

lcd.setCursor(0,0);

lcd.print("3 Slots Free");

lcd.setCursor(0,1);

lcd.print("Slot 1 2 3 Free");

delay(500);

}

else if((d1>100 & d2>100)|(d2>100 & d3>100)|(d3>100 & d1>100))

{

lcd.setCursor(0,0);

lcd.print("2 Slots Free");

lcd.setCursor(0,1);

if(d1>100 & d2>100)

lcd.print("Slot 1 & 2 Free");

else if(d1>100 & d3>100)

lcd.print("Slot 1 & 3 Free");

else

lcd.print("Slot 2 & 3 Free");

delay(500);

}

else if(d1<100 & d2<100 & d3<100)

{

lcd.setCursor(0,0);

lcd.print("No Slot Free");

lcd.setCursor(0,1);

lcd.print("Parking Full");

delay(500);

}

else if((d1<100 & d2<100)|(d2<100 & d3<100)|(d3<100 & d1<100))

{

lcd.setCursor(0,0);

lcd.print("1 Slot Free");

lcd.setCursor(0,1);

if(d1>100)

lcd.print("Slot 1 is Free");

else if (d2>100)

lcd.print("Slot 2 is Free");

else

lcd.print("Slot 3 is Free");

delay(500);

}

delay(100);

}