**Smart Parking**

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**Aim**:-

Smart Parking involves the use of low cost sensors, real-time data and applications that allow users to monitor available and unavailable parking spots. The goal is to automate and decrease time spent manually searching for the optimal parking floor, spot and even lot. Some solutions will encompass a complete suite of services such as online payments, parking time notifications and even car searching functionalities for very large lots. A parking solution can greatly benefit both the user and the lot owner.

**Components required:-**

1. Intel Galileo gen 2 board
2. Breadboard
3. Ultrasonic sensor
4. 1 LED light
5. Jumper’s wires i.e.
6. Male to male
7. Male to female

**Connection steps:-**

1. Ultrasonic sensor has 4 pins. Ground pin of ultrasonic goes to analog ground on Intel board.
2. VCC pin of ultrasonic goes to analog pin of 5V on Intel board.
3. Trig pin of ultrasonic sensor goes to digital port 7 on Intel board.
4. Echo pin of ultrasonic sensor goes to digital port 8 on Intel board.
5. The negative end of LED goes to one end of register and another end of register goes to analog ground.
6. The positive end of LED goes to digital port 4 on Intel board.

**Code:**

#define echopin 8

#define trigpin 7

#define Ledpin 4

long duration;

int distance;

int maxrange=4;

int minrange=0;

void setup() {

  // put your setup code here, to run once:

  Serial.begin(9600);

  pinMode(trigpin, OUTPUT);

  pinMode(Ledpin, OUTPUT);

  pinMode(echopin, INPUT);

  }

void loop() {

  // put your main code here, to run repeatedly:

  digitalWrite(trigpin,LOW);

  delayMicroseconds(2);

  digitalWrite(trigpin,HIGH);

  delayMicroseconds(10);

  digitalWrite(trigpin,LOW);

  duration=pulseIn(echopin, HIGH);

  distance=duration\*0.034/2;

  Serial.print("Distance: ");

  Serial.println(distance);

  if(distance <= maxrange )

  {

   digitalWrite(Ledpin,HIGH);

  }

  else{

     digitalWrite(Ledpin,LOW);

  }

   delay(50);

}