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LAB: 4

Smart Parking System Part 2

Aim : Smart Parking System and LED is given through motor opening and closing

Components :

1)Arduino

2)Servo motor

3)LED

4)Ultrasonic sensor

5)Jumper wires

6)IR sensor

7)Breadboard

Procedure :

1)Connect the sensors with the Arduino with the required pins as shown in the circuit diagram.

2)Place the LED as needed in the breadboard.

3)The code mentioned below is uploaded to the Arduino.

4)The flow in the node red is made with connecting the serial in block with the function block and then connect the function block to the gauge, text and chart blocks.

5)Deploy the flow.

6)Then open the dashboard of the node red where the output is visible.

Code:

```
#include<Servo.h>
Servo servo;
#define servo 8

int trig = 4;
int echo = 5;
int ir = 6;
int led = 7;
int irRead;
int carStatus = 0;
float time, dist;

void setup() {
  // put your setup code here, to run once:
  pinMode(trig, OUTPUT);
  pinMode(echo, INPUT);
  pinMode(ir, INPUT);
  pinMode(led, OUTPUT);
  Serial.begin(9600);
}
```

```
void loop() {
  // put your main code here, to run repeatedly:
  digitalWrite(trig, LOW);
  delay(5);
  digitalWrite(trig, HIGH);
  delay(5);
  digitalWrite(trig, LOW);
  time = pulseIn (echo, HIGH);
  dist = time * 0.034/2;
  if(dist<200)
  {
    digitalWrite(led, HIGH);
    delay(4000);
    Serial.print("Door-open, ");
    Serial.print(dist);
    carStatus = 1;
  }
  if(carStatus = 1);
  {
    irRead = digitalRead(ir);
    if(irRead == 1)
    {
      Serial.print(", Car-Pakeed");
      carStatus = 0;
    }
  }
  Serial.println();
```

}

NODE Layout:
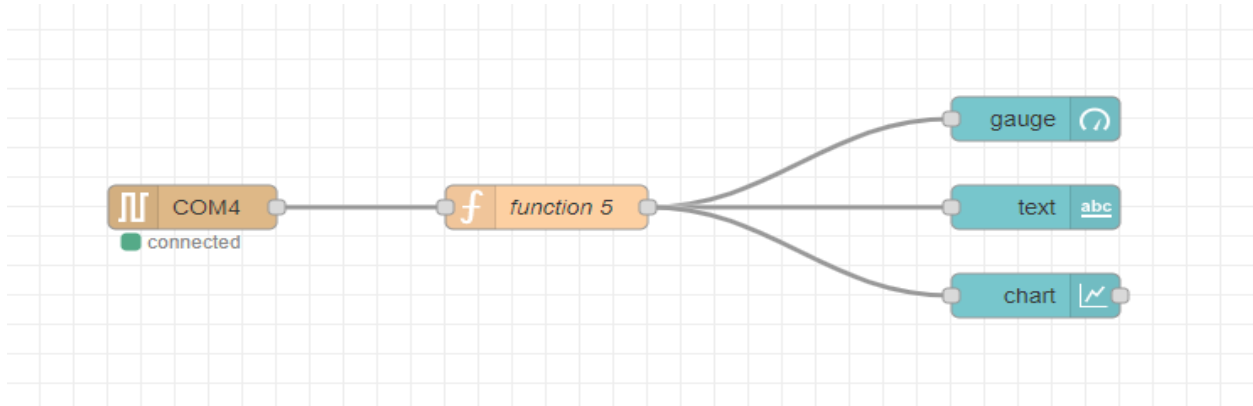
Edit gauge node

| Delete | | | Cancel | Done |

Properties

Group	[Home] Default
Size	auto
Type	Gauge
Label	gauge
Value format	{{value}}
Units	units
Range	min 0 max 10
Colour gradient	(green) (yellow) (red)
Sectors	0 ... optional ... optional ... 10
Name	

Edit text node

Delete   Cancel   Done

⚙ Properties

⊞ Group	[Home] Default
⊡ Size	auto
I Label	text
I Value format	{{msg.payload}}
▦ Layout	label **value** label **value** label **value**
	label **value** label **value**
🏷 Name	

Edit chart node

Delete   Cancel   Done

⚙ Properties

⊞ Group	[Home] Default
⊡ Size	auto
I Label	chart
⬘ Type	⬘ Line chart ☐ enlarge points
X-axis	last 1 hours OR 1000 points
X-axis Label	▾ HH:mm:ss ☐ as UTC
Y-axis	min max
Legend	None Interpolate linear
Series Colours	
Blank label	display this text before valid data arrives
🏷 Name	Name

Default

text   **Door-open, 0.00, Car-Pakeed**

chart

gauge

Door-open, 0.00, Car-Pakeec

0   units   10

Circuit :