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//---------------------------------------------------------------- //
// CI Lab Project
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//----------------------------------------------------------------//
#define echoPin 2 // attach pin D2 Arduino to pin Echo of HC-SR04
#define trigPin 3 //attach pin D3 Arduino to pin Trig of HC-SR04

// defines variables
long duration; // variable for the duration of sound wave travel
int distance; // variable for the distance measurement
char m=0;
void setup()
{

pinMode(8, OUTPUT);
pinMode(9, OUTPUT);
pinMode(10, OUTPUT);
pinMode(11, OUTPUT);
pinMode(12, OUTPUT);
pinMode(trigPin, OUTPUT); // Sets the trigPin as an OUTPUT
pinMode(echoPin, INPUT); // Sets the echoPin as an INPUT

Serial.begin(9600);
}
void loop()
{
 if (Serial.available()>0)
 {
  m=Serial.read();
  Serial.println(m);
   }

 // Clears the trigPin condition
    digitalWrite(trigPin, LOW);
    delayMicroseconds(2);

  // Sets the trigPin HIGH (ACTIVE) for 10 microseconds
    digitalWrite(trigPin, HIGH);
    delayMicroseconds(10);
    digitalWrite(trigPin, LOW);

  // Reads the echoPin, returns the sound wave travel time in microseconds
    duration = pulseIn(echoPin, HIGH);

  // Calculating the distance
    distance = duration * 0.034 / 2; // Speed of sound wave divided by 2 (go and
```

```
back)
 if (m=='R')
{
  digitalWrite(9, HIGH);
  digitalWrite(10, LOW);
  digitalWrite(11, HIGH);
  digitalWrite(12, LOW);
   }

  else if (m=='L')
{

  digitalWrite(9, LOW);
  digitalWrite(10, HIGH);
  digitalWrite(11, LOW);
  digitalWrite(12, HIGH);
   }

else if (m=='F')
{
  digitalWrite(9, HIGH);
  digitalWrite(10, LOW);
  digitalWrite(11, LOW);
  digitalWrite(12, HIGH);

   }

 else if (m=='B')
{
  digitalWrite(9, LOW);
  digitalWrite(10, HIGH);
  digitalWrite(11, HIGH);
  digitalWrite(12, LOW);

   }
else if (m=='S')
{
  digitalWrite(9, LOW);
  digitalWrite(10, LOW);
  digitalWrite(11, LOW);
  digitalWrite(12, LOW);
   }
  else if (m=='X')
{
  digitalWrite(8, HIGH);
   }
  else if (m=='Z')
{
  digitalWrite(8, LOW);
```

```
  }
  else if (m=='D')
{
    Serial.print("Distance: ");
    Serial.print(distance);
    Serial.print(" cm \n");
    delay(100);

  }
}
```