

Solution :

ASSIGNMENT-4

Date	31October2022
TeamID	PNT2022TMID52232
MaximumMarks	2Marks

Question1:

*Write code and connections in wokwi for the ultrasonic sensor.

*Write code and connections in work for ultrasonic sensor. Whenever distance is less than 100cms send "alert" to IBM cloud and display in device recent events.

Code:

```
#define ECHO_PIN 2
#define TRIG_PIN 3

void setup() {
  Serial.begin(115200);
  pinMode(LED_BUILTIN, OUTPUT);
  pinMode(TRIG_PIN, OUTPUT);
  pinMode(ECHO_PIN, INPUT);
}

float readDistanceCM() {
  digitalWrite(TRIG_PIN, LOW);
  delayMicroseconds(2);
  digitalWrite(TRIG_PIN, HIGH);
  delayMicroseconds(10);
  digitalWrite(TRIG_PIN, LOW);
  int duration = pulseIn(ECHO_PIN, HIGH);
  return duration * 0.034 / 2;
}
```

```
void loop() {
  float distance = readDistanceCM();

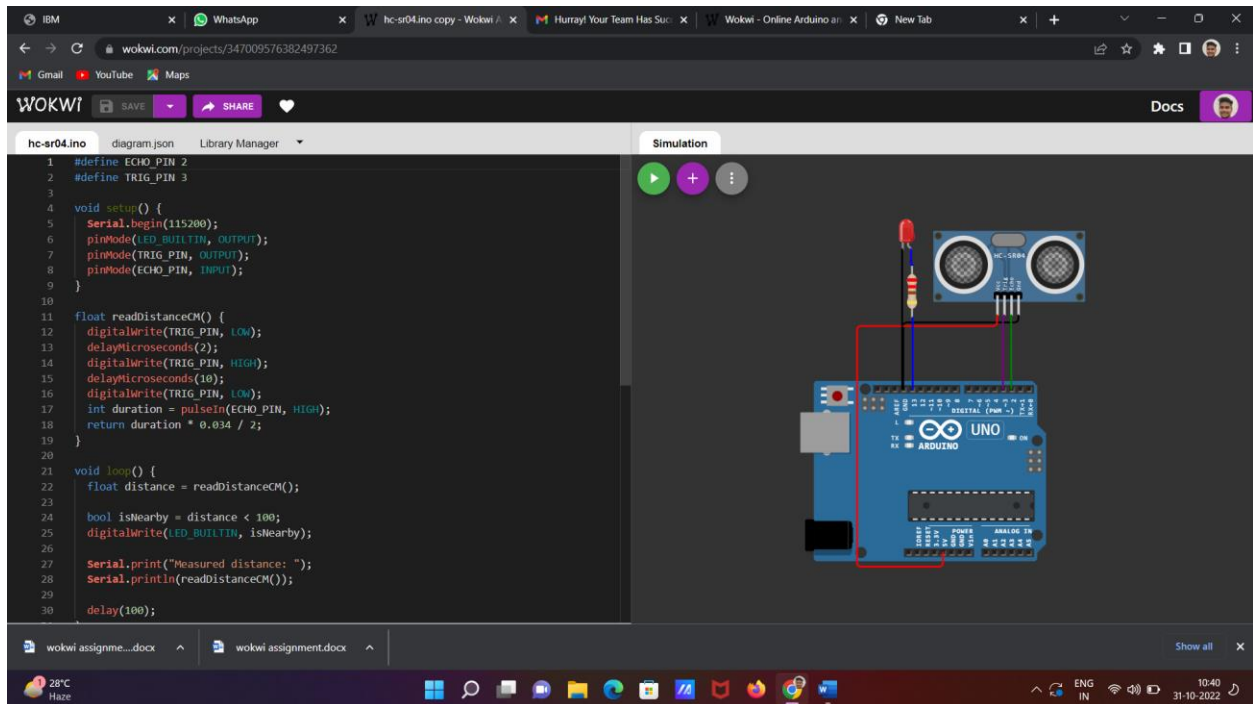
  bool isNearby = distance < 100;
  digitalWrite(LED_BUILTIN, isNearby);

  Serial.print("Measured distance: ");
  Serial.println(readDistanceCM());

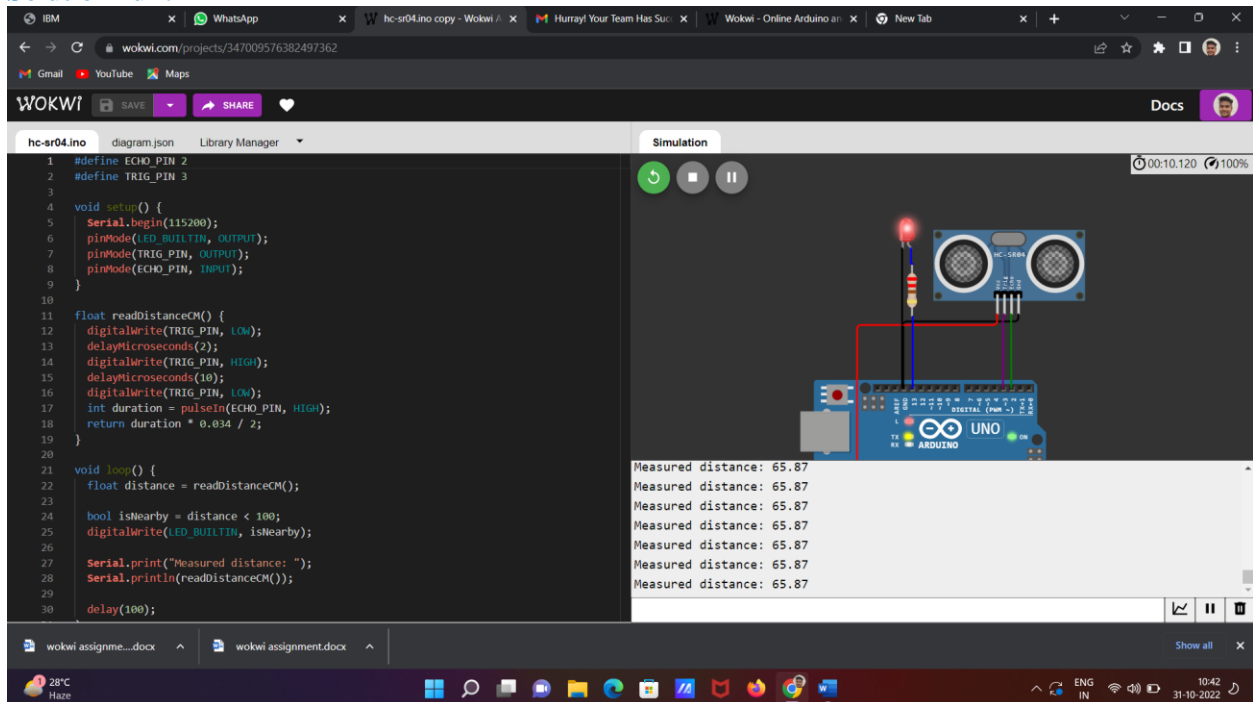
  delay(100);
}
```

WOKWI LINK : <https://wokwi.com/projects/347009576382497362>

Solution :

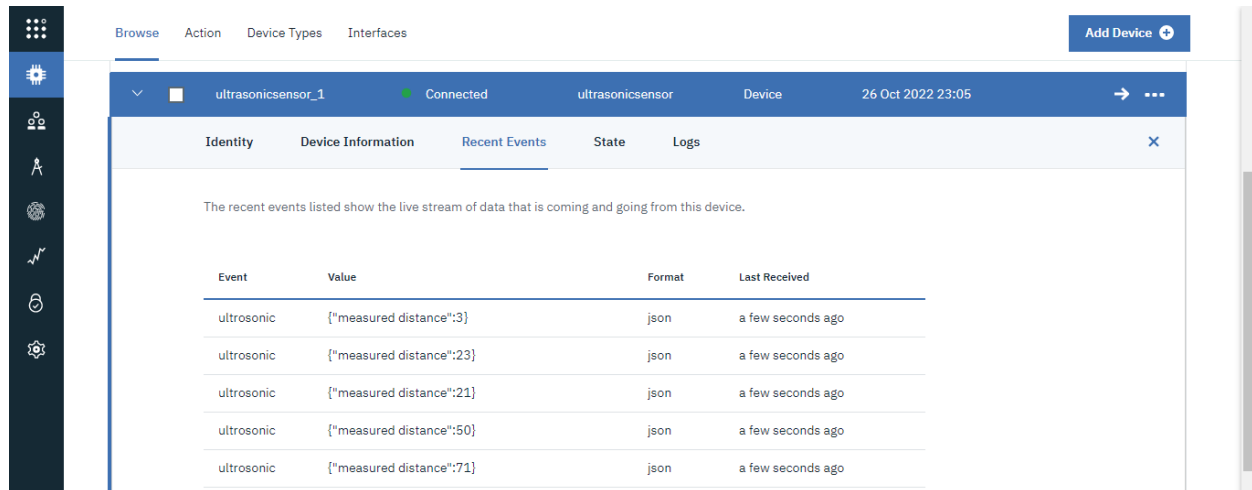


Solution run:



OUTPUT:

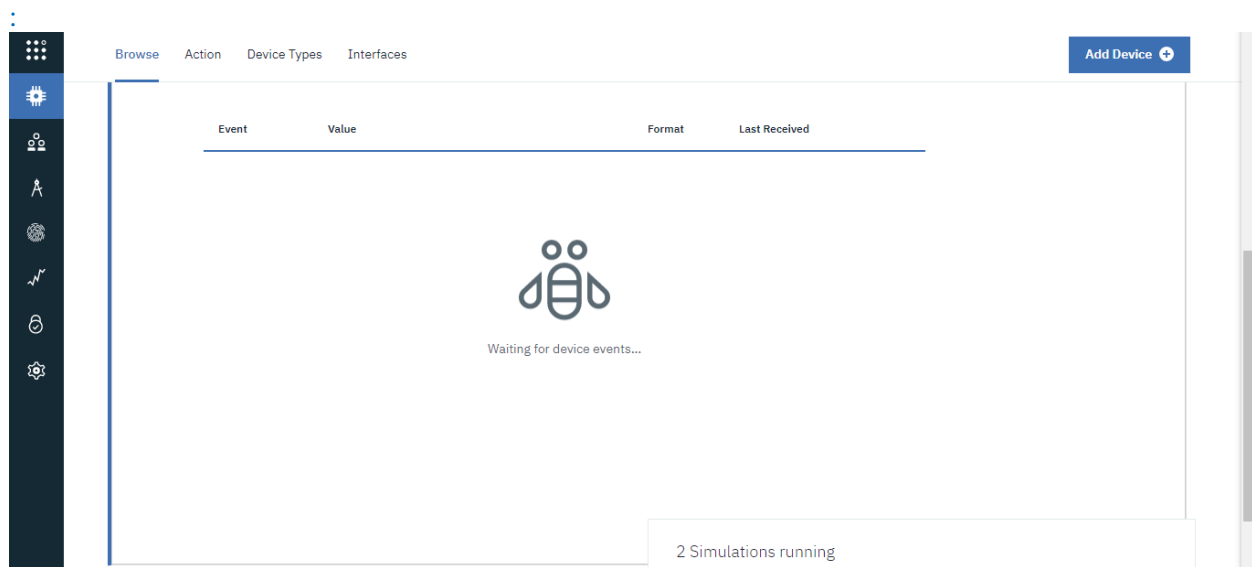
Solution :



The screenshot shows a web interface for managing IoT devices. On the left is a dark sidebar with icons for home, devices, people, a person, a globe, a signal, a lock, and settings. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A blue 'Add Device' button with a plus icon is on the right. The main content area displays details for a device named 'ultrasonicsensor_1', which is 'Connected'. Below this, there are tabs for 'Identity', 'Device Information', 'Recent Events' (selected), 'State', and 'Logs'. A message states: 'The recent events listed show the live stream of data that is coming and going from this device.' Below this message is a table with the following data:

Event	Value	Format	Last Received
ultrasonic	{"measured distance":3}	json	a few seconds ago
ultrasonic	{"measured distance":23}	json	a few seconds ago
ultrasonic	{"measured distance":21}	json	a few seconds ago
ultrasonic	{"measured distance":50}	json	a few seconds ago
ultrasonic	{"measured distance":71}	json	a few seconds ago

When no object is detected



This screenshot shows the same IoT dashboard interface, but the 'Recent Events' tab is empty. In the center of the main content area, there is a large icon of a person with a sensor on their head, and below it, the text 'Waiting for device events...'. At the bottom right of the interface, a status box indicates '2 Simulations running'.