

ASSIGNMENT-4

Date	31October2022
Team ID	PNT2022TMID52223
Maximum Marks	2Marks

Question:

*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();

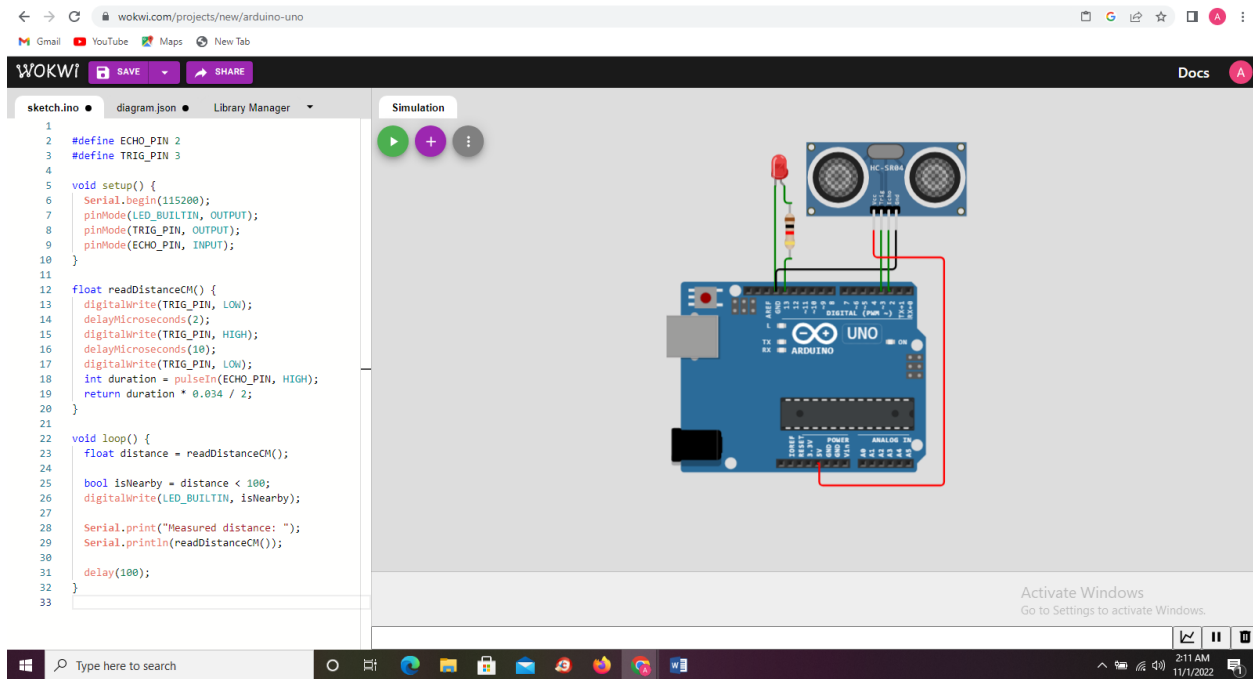
  bool isNearby = distance < 100;
  digitalWrite(LED_BUILTIN, isNearby);

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

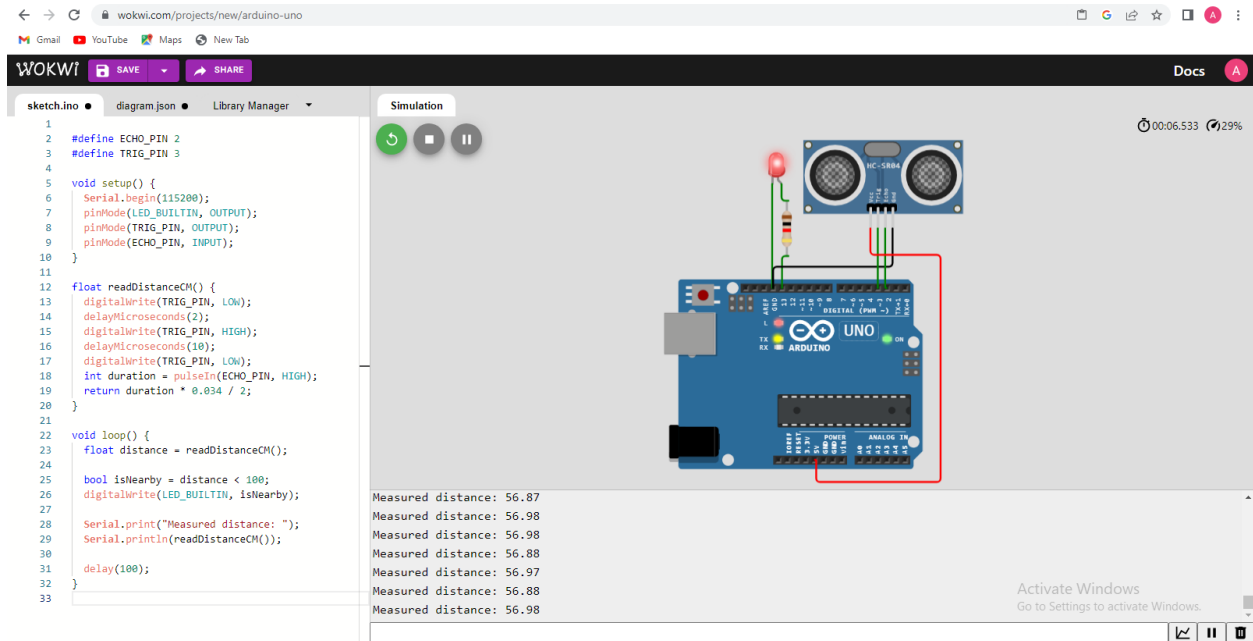
  delay(100);
}
```

WOKWI LINK : <https://wokwi.com/projects/347115384217797204>

Solution :



Solution run:



OUTPUT:

DATA IS SENT TO IBM CLOUD WHEN OBJECT IS DETECTED

The screenshot shows the IBM Watson IoT Platform interface. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A search bar is present with the text 'Search by Device ID'. The 'Device Simulator' toggle is turned on. The main content area displays a table of devices, with 'ultrasonicsensor2' selected. Below the device list, the 'Recent Events' tab is active, showing a table of events. The events table has columns for 'Event', 'Value', 'Format', and 'Last Received'. The events listed are 'event_1' with values like '["measured distance":83]', '["measured distance":79]', '["measured distance":0]', and '["measured distance":73]', all in 'json' format, received 'a few seconds ago'. A status box at the bottom right indicates '1 Simulation running'.

Event	Value	Format	Last Received
event_1	["measured distance":83]	json	a few seconds ago
event_1	["measured distance":79]	json	a few seconds ago
event_1	["measured distance":0]	json	a few seconds ago
event_1	["measured distance":73]	json	a few seconds ago

When no object is detected

The screenshot shows the IBM Watson IoT Platform interface, similar to the previous one. The 'Device Simulator' toggle is turned on. The main content area displays the same device list with 'ultrasonicsensor2' selected. The 'Recent Events' tab is active, but the events table is empty. Below the table, there is a large icon of a person with a question mark and the text 'Waiting for device events...'. A status box at the bottom right indicates '0 Simulations running'.

Event	Value	Format	Last Received
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