

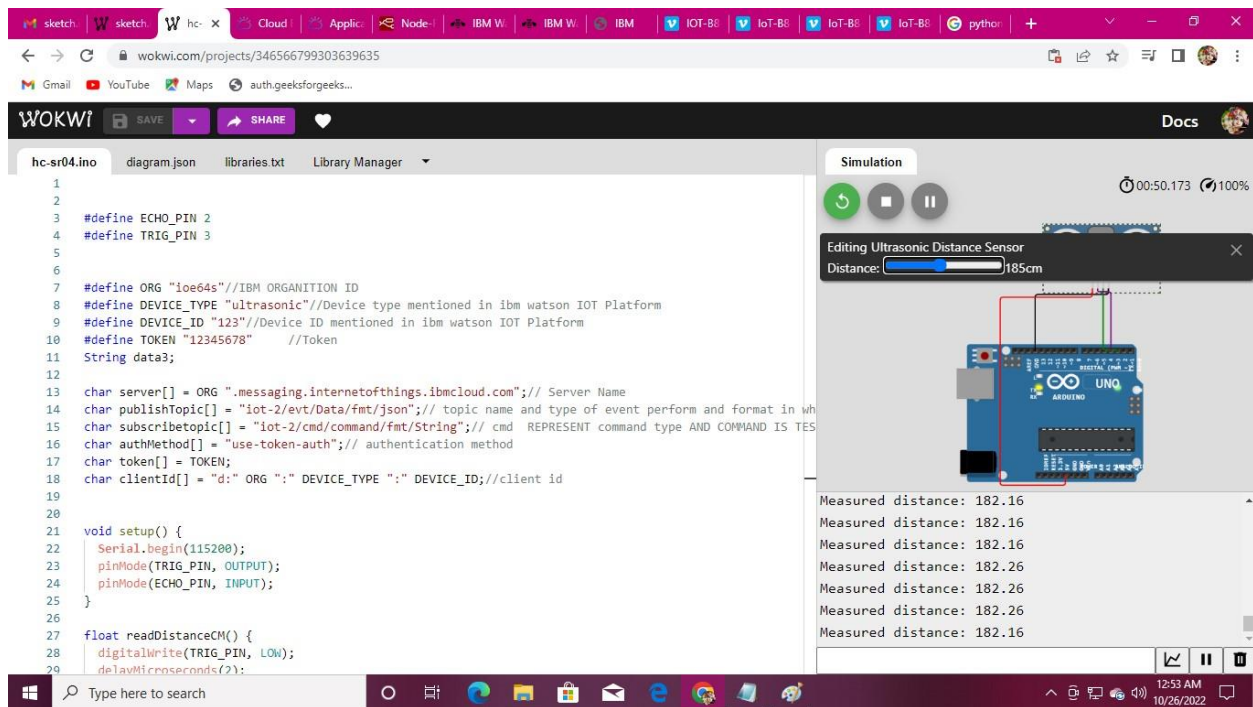
Assignment 4

Wokwi:

The screenshot displays the Wokwi IDE interface. The main editor shows a C++ code file named `hc-sr04.ino`. The code is configured for an Arduino Uno and includes the following key sections:

- Pin Definitions:** `ECHO_PIN` is defined as 2 and `TRIG_PIN` as 3.
- IoT Configuration:** Includes `ORG` ("1oe64s"), `DEVICE_TYPE` ("ultrasonic"), `DEVICE_ID` ("123"), and `TOKEN` ("12345678").
- Server and Topic:** `server` is set to `"messaging.internetofthings.ibmcloud.com"` and `publishTopic` is `"iot-2/evt/Data/fmt/json"`.
- Authentication:** `authMethod` is "use-token-auth" and `token` is the provided token.
- Client ID:** `clientId` is constructed as `"d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID"`.
- Setup Function:** Initializes the serial port at 115200 baud, sets `TRIG_PIN` as an output and `ECHO_PIN` as an input.
- Read Distance Function:** `readDistanceCM()` triggers a digital write on `TRIG_PIN` and a 2ms delay.

The right-hand side of the IDE features a **Simulation** window. It shows a 3D model of an Arduino Uno with an Ultrasonic Distance Sensor (HC-SR04) connected. A control panel for the sensor is visible, showing a distance of 20cm. Below the simulation, a terminal window displays a series of `alert19.79` messages, indicating the sensor's output.



Ibm cloud:

