Q. Control an actuator through cloud.

AIM:- To control an actuator through cloud.

Components :-

1) Arduino
2) DC Motor
2) Dual H-Bridge
3) 9V Battery
4) Jumper wires
5) Bread board.

Procedure:

→ Place the H-bridge in the middle of the bread board.

→ Connect the H-bridge as follows:-

- Top-1 pin to 5V
- Bottom-1 to D9
- Bottom-2 to D3
- Bottom-7 to D2
- Bottom-3 to DC Motor ground wire
- Bottom-6 to DC Motor power
- bottom-4 and bottom-5 pins to GND

→ Create new thing and configure your device.

→ Add three variables

- Motor Switch - Boolean
- Motor Direction - Boolean
- Motor Speed - Percentage (Float)

→ Create three widgets :

- two 'switch' widgets linked to the motorSwitch & motorDirection variables.
- One 'slider' widget with a value range 0-255, linked to motorSpeed variable.

Code

```
#include "thingProperties.h"
const int controlPin1 = 2;
const int controlPin2 = 3;
const int enablePin = 9;
void setup() {
    Serial.begin(9600);
    delay(1500);
    pinMode(controlPin1, OUTPUT);
    pinMode(controlPin2, OUTPUT);
    pinMode(enablePin, OUTPUT);
    initProperties();
    ArduinoCloud.begin(ArduinoIOTPreferredConnectio
    setDebugMessageLevel(2);
    ArduinoCloud.printDebugInfo();
}
void loop() {
    ArduinoCloud.update();
    if (motorDirection == 1) {
        digitalWrite(controlPin1, HIGH);
        digitalWrite(controlPin2, LOW);
        Serial.println("motor direction 1");
    }
```

```
else {
  digitalWrite (controlPin1, LOW);
  digitalWrite (controlPin2, HIGH);
  Serial.println ("motor direction 2");
}
if (motorSwitch == 1) {
  analogWrite (enablePin, motorSpeed);
  Serial.println ("motor on");
} else {
  analogWrite (enablePin, 0);
  Serial.println ("motor off");
}
}
void onMotorSpeedChange () {
}
void onMotorSwitchChange () {
}
```

Circuit