

PROJECT DEVELOPMENT PHASE

DELIVERY OF SPRINT 3

Date	18 October 2022
Team ID	PNT2022TMID38250
Project Name	Personal Assistance for Seniors Who Are Self-Reliant.

CODE FOR SIMULATION:

```
#include <WiFi.h> //library for wifi
#include <PubSubClient.h> //library for MQTT
#include <LiquidCrystal_I2C.h>
#define LED 2
void callback(char* subscribetopic, byte* payload,
unsigned int payloadLength);
//-----credentials of IBM Accounts----- #define ORG
"ok5c7o" //IBM ORGANITION ID
#define ORG "8n29fa"
#define DEVICE_TYPE "Medicineremainer" //Device type
mentioned in ibm watson IOT Platform
#define DEVICE_ID "29072001" //Device ID mentioned in ibm
watson IOT Platform
#define TOKEN "pY0&w-7vXlnygu7I5B" //Token
String data3="";
int buzz = 13;
//----- Customise the above values ----- char
server[] = ORG
".messaging.internetofthings.ibmcloud.com"; // Server Name
char server[] = ORG
".messaging.internetofthings.ibmcloud.com"; // Server Name
char publishTopic[] = "iot-2/evt/Data/fmt/json"; // topic
name and type of event perform and format in which data to
be send
char subscribetopic[] = "iot-2/cmd/command/fmt/String"; //
cmd REPRESENT command type AND COMMAND IS TEST OF
char authMethod[] = "use-token-auth"; // authentication
method
char token[] = TOKEN;
```

```

char clientId[] = "d:" ORG ":" DEVICE_TYPE ":"
DEVICE_ID;//client id
LiquidCrystal_I2C lcd(0x27,16,2);
//-----
WiFiClient wifiClient; // creating the instance for
wificlient
PubSubClient client(server, 1883, callback ,wifiClient);
//calling the predefined client id by passing parameter
like server
//id,portand wificredential
void setup()// configureing the ESP32
{
  Serial.begin(115200);
  pinMode(LED,OUTPUT);
  delay(10);
  Serial.println();
  wificonnect();
  mqttconnect();
}
void loop()// Recursive Function
{
  if (!client.loop()) {
    mqttconnect();
  }
}
/*.....retrieving to
Cloud.....*/
void mqttconnect() {
  if (!client.connected()) {
    Serial.print("Reconnecting client to ");
    Serial.println(server);
    while (!!!client.connect(clientId, authMethod, token)) {
      Serial.print(".");
      delay(500);
    }
    initManagedDevice();
    Serial.println();
  }
}
void wificonnect() //function defination for wificonnect
{
  Serial.println();

```

```

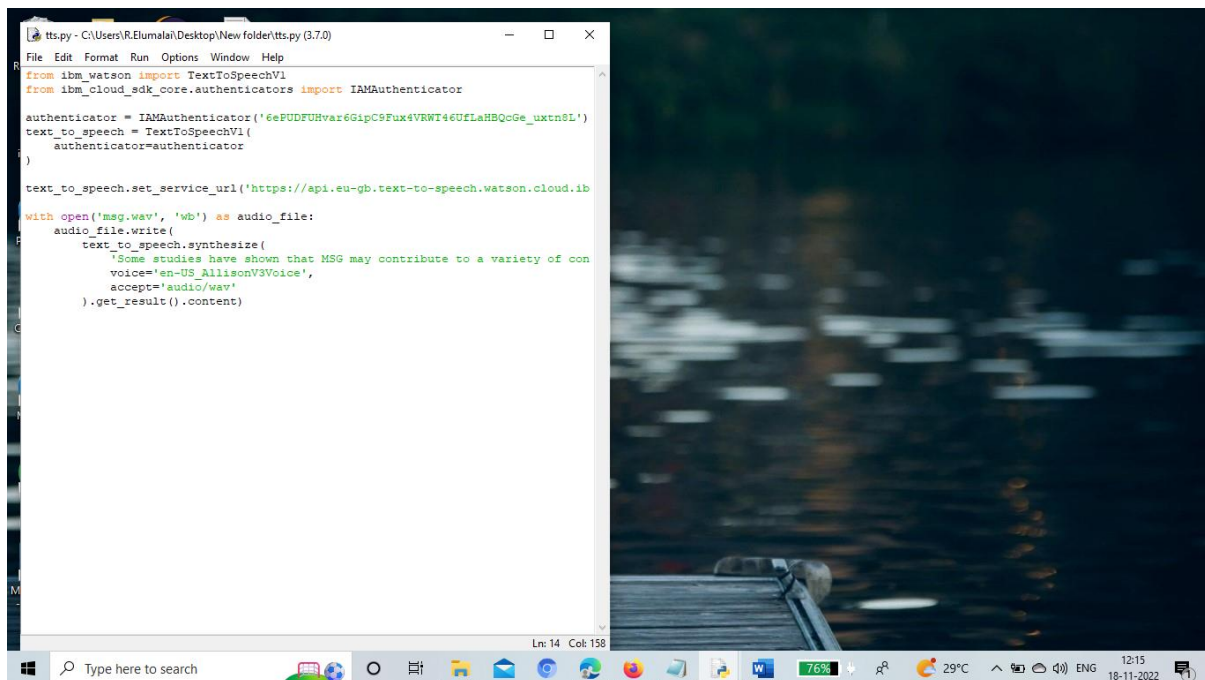
Serial.print("Connecting to ");
WiFi.begin("Wokwi-GUEST", "", 6); //passing the wifi
credentials to establish the connection
while (WiFi.status() != WL_CONNECTED) {
  delay(500);
  Serial.print(".");
}
Serial.println("");
Serial.println("WiFi connected");
Serial.println("IP address: ");
Serial.println(WiFi.localIP());
}
void initManagedDevice() {
  if (client.subscribe(subscribetopic)) {
    Serial.println((subscribetopic));
    Serial.println("subscribe to cmd OK");
  }
  else {
    Serial.println("subscribe to cmd FAILED");
  }
}
void callback(char* subscribetopic, byte* payload,
unsigned int payloadLength)
{
  Serial.print("callback invoked for topic: ");
  Serial.println(subscribetopic);
  for (int i = 0; i < payloadLength; i++) {
    //Serial.print((char)payload[i]);
    data3 += (char)payload[i];
  }
  Serial.println("Please take "+ data3);
  if(data3 != "")
  {
    lcd.init();
    lcd.print("Take"+ data3);
    digitalWrite(LED,HIGH);
    delay(20000);
    digitalWrite(LED,LOW);
  }
  else
  {
    digitalWrite(LED,LOW);
  }
}

```

```
}  
data3="";  
}
```

CODE FOR TEXT TO SPEECH:

```
from ibm_watson import TextToSpeechV1  
from ibm_cloud_sdk_core.authenticators import IAMAuthenticator  
  
authenticator =  
IAMAuthenticator('6ePUDFUHvar6GipC9Fux4VRWT46UfLaHBQcGe_uxtn8  
L')  
text_to_speech = TextToSpeechV1(  
    authenticator=authenticator  
)  
  
text_to_speech.set_service_url('https://api.eu-gb.text-to-  
speech.watson.cloud.ibm.com/instances/60bd26da-15b5-4fb6-8860-  
ce64f20d948e')  
  
with open('msg.wav', 'wb') as audio_file:  
    audio_file.write(  
        text_to_speech.synthesize(  
            'Some studies have shown that MSG may contribute to a variety of  
conditions, including obesity, central nervous system disorder, and reproductive  
malfunctions, though more research is needed in these areas. Symptoms that  
some have claimed occur after consuming MSG include',  
            voice='en-US_AllisonV3Voice',  
            accept='audio/wav'  
        ).get_result().content)
```



CODE FOR SPEECH TO TEXT:

```
from os.path import join, dirname
```

```
import json
```

```
from ibm_watson import SpeechToTextV1
```

```
from ibm_cloud_sdk_core.authenticators import IAMAuthenticator
```

```
authenticator =
```

```
IAMAuthenticator('TRtiCOhPiSmVg_5Kp3hAo7Pe6Td6wiFhqCy_wublfUdt')
```

```
speech_to_text = SpeechToTextV1(
```

```
    authenticator=authenticator
```

```
)
```

```
speech_to_text.set_service_url('https://api.eu-gb.speech-to-  
text.watson.cloud.ibm.com/instances/d0dcc6ba-b007-4357-974b-  
1687f4353869')
```

```

with open(join(dirname(__file__), './.', 'msg.wav'),
           'rb') as audio_file:

    speech_recognition_results = speech_to_text.recognize(

        audio=audio_file,

        content_type='audio/wav',

    ).get_result()

print(json.dumps(speech_recognition_results, indent=2))

```

OUTPUT:

```

===== RESTART: C:\Users\R.Elumalai\Desktop\New folder\Speechtotext.py =====
{
  "result_index": 0,
  "results": [
    {
      "final": true,
      "alternatives": [
        {
          "transcript": "some studies have shown that MSG may contribute to a variety of conditions including obesity central nervous system disorder and reproductive malfunctions though more research is needed in these areas symptoms that some acclaimed occur after consuming MSG include ",
          "confidence": 0.91
        }
      ]
    }
  ]
}
>>>

```