Sprint 2

Team ID	PNT2022TMID023
Project Name	IOT based safety gadget for child safety monitoring and notification
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Sprint 2 is about LOGIN and NOTIFIACATION of the IoT device in Parent’s Web Application for getting information about Child’s Status.

LOGIN:

This Coding is to built login page of parent’s application to get information about child’s condition.

Coding:

```
<!DOCTYPE html>
   <html>
     <head>
          <meta           name="viewport"           content="width=device-width,
initialscale=1">
   <title> Login Page </title>
        <style>
      Body {          font-family: Calibri, Helvetica, sans-serif;
         backgroundcolor:#9FE2BF;
     }

button      {           background-color:
        #9FE2BF; width: 100%; color:
        black;  padding: 15px;  margin:
        10px 0px; border:
```

```
                    none; cursor: pointer;
            }
          form {
                  border: 3px solid #f1f1f1;
            }
               input[type=text], input[type=password]
                 {
                   width:  100%;    margin:
                   8px   0;   padding:   12px
                   20px;                display:
                   inlineblock;        border:
                   2px white;  box-sizing:
                   border-box;
}     button:hover   {
opacity:    0.7;        }
.cancelbtn  {  width:
auto; padding: 10px
18px;   margin:
10px 5px;
}
.container {     padding:
25px;
  background-color: #CCCCFF;
}
    </style> </head>
          <body>
              <center> <h1> Login Form </h1> </center>
          <form>
             <div class="container">
                      <label>Device ID/Number: </label>
                              <input type="password" placeholder="Enter Password"
name="password" required>
                    <label>E-Mail : </label>
```

```
                              <input type="text" placeholder="Enter Username"
name="username" required>
                    <label>Password : </label>
                   <input type="password" placeholder="Enter Password"
name="password" required>
         <button type="submit">Login</button>
                    <button class="loginBtn loginBtn--facebook">Login with
Facebook.</button>

         <button class="loginBtn loginBtn--google">Login with Google.</button>
                    <input type="checkbox" checked="checked"> Remember me

         <button type="button" class="cancelbtn"> Cancel</button> Forgot <a
href="#"> password? </a>
            </div>
      </form>
   </body>   </html>
```

NOTIFICATION:

This coding will make connection between IoT Device & Parent's application. When the child cross across the geofence message will be notified on parent's application.

Coding:

```
#include<WiFi.h>//library for wifi

#include<PubSubClient.h>//library for MQTT   void callback(char*
subscribetopic, byte* payload,unsigned int payloadlength);

//---------------credentials of IBM Account------

#define ORG "1hjj6h"// IBM ORGANIZATION ID

#define DEVICE_TYPE "abdur9489"//DEVICE TYPE MENTIONED IN IOT
WATSON
```

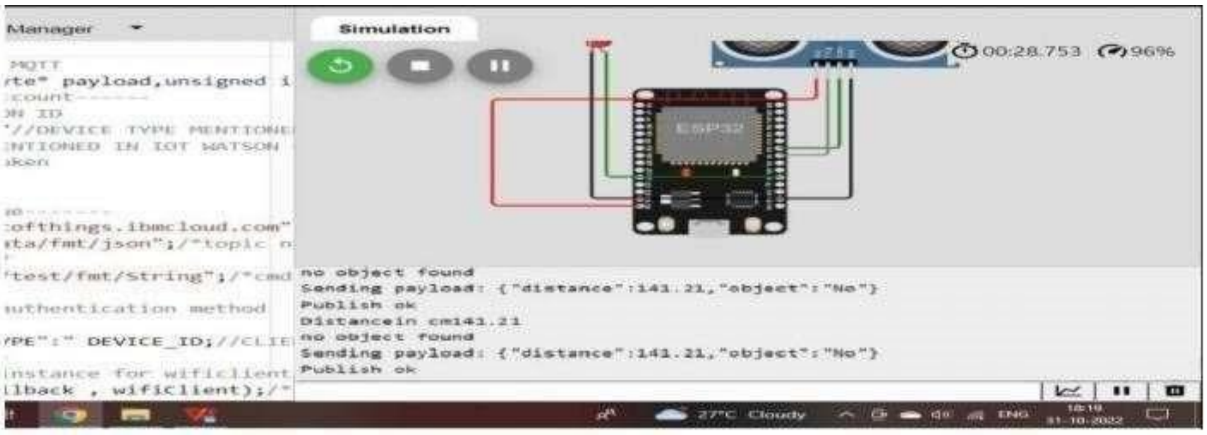
```
PLATFORM #define DEVICE_ID "distance_alert"//DEVICE ID MENTIONED IN IOT
WATSON
PLATEFORM

#define TOKEN "QABc-&&E&3H-AJH3EB"//Token String data3;

float dist;

//-----------customize the above value-------

char server[]=ORG ".messaging.internetofthings.ibmcloud.com";//server
name

char publishtopic[]="ultrasonic/evt/Data/fmt/json";/*topic name and
type of event perform and format

in which data to be send*/

char subscribetopic[]="ultrasonic/cmd/test/fmt/String";/*cmd REPRESENT
Command tupe and

COMMAND IS TEST OF FORMAT STRING*/

char authMethod[]="use-token-auth";//authentication method char token[]=TOKEN;
char clientid[]="d:" ORG ":" DEVICE_TYPE":" DEVICE_ID;//CLIENT ID
//
WiFiClient wifiClient;// creating an instance for wificlient
PubSubClient client(server, 1883 , callback , wifiClient);/*calling the predefined
client id by passing parameter like server id,portand wificredential*/  int LED
=4;   int trig =5; int echo=18; void
setup(){
Serial.begin(115200); pinMode(trig,OUTPUT); pinMode(echo,INPUT);
pinMode(LED,OUTPUT); delay(10); Serial.println(); wificonnect(); mqttconnect();

void loop() { digitalWrite(trig,LOW); digitalWrite(trig,HIGH);
delayMicroseconds(10); digitalWrite(trig,LOW);
```

```
float dur=pulseIn(echo,HIGH); float dist=(dur * 0.0343)/2; Serial.print("distance in
cm"); Serial.println(dist); PublishData(dist);  delay(1000);
if (!client.loop()){ mqttconnect();
}
}
/*.............................................retriving to cloud. .................................................
*/
void PublishData(float dist){ mqttconnect();//function call for connecting to ibm
/*creating the string in form of JSON to update the data to ibm cloud*/ String
object;
            if(dist<100)
              {
                   digitalWrite(LED,HIGH); Serial.println("no object is near");
object="Near";
      }
else
           {
               digitalWrite(LED,LOW); Serial.println("no object found"); object="No";
           }
          String payload="{\"distance\":"; payload +=dist;  payload
          +="," "\"object\":\""; payload += object;  payload +=
          "\"}";
          Serial.print("Sending payload: ");
Serial.println(payload);          if(client.publish(publishtopic,
(char*) payload.c_str())){
                      Serial.println("Publish ok");/* if its sucessfully upload data on the
cloud then it will print publish ok in serial monitor or else it will print publish
failed*/
    } else{
            Serial.println("Publish failed");
        }
}
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 defenition for wificonnect
 {
       Serial.println(); Serial.print("Connecting to ");
WiFi.begin("vivo 1816", "taetae95",6);//PASSING THE WIFI CREDIDENTIALS
TO  ESTABLISH 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("dta: "+ data3);
```

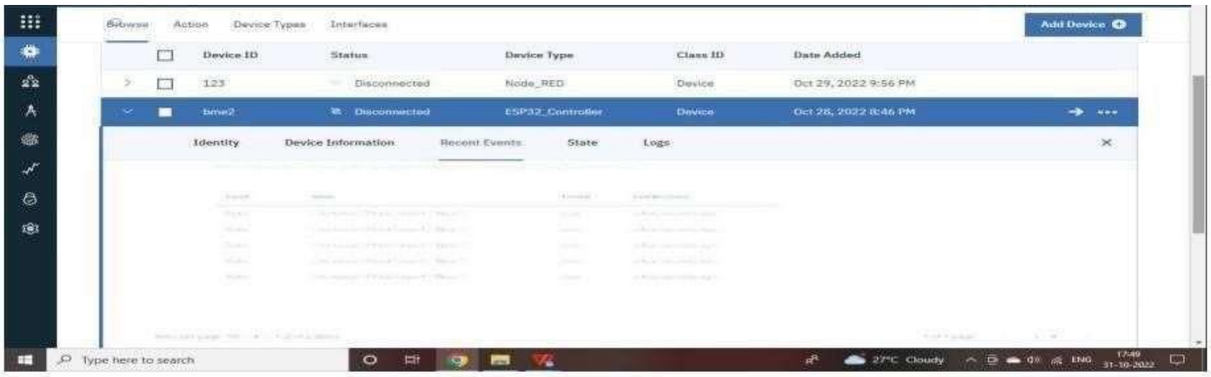
```
//if(data3=="Near")
//{
//Serial.println(data3);
//digitalWrite(LED,HIGH);
//}
//else //{
//Serial.println(data3);
//digitalWrite(LED,LOW);//} data3="";
}
```

Output:



```
 MQTT
rte* payload,unsigned i
:count------
DN ID
"//DEVICE TYPE MENTIONE
ENTIONED IN IOT WATSON
oken

id-------
:ofthings.ibmcloud.com"
ata/fmt/json";/"topic n

'test/fmt/String";/"cmd

authentication method

YPE":" DEVICE_ID;//CLIE

instance for wificlient
llback , wifiClient);/"
```

```
no object found
Sending payload: {"distance":141.21,"object":"No"}
Publish ok
Distancein cm141.21
no object found
Sending payload: {"distance":141.21,"object":"No"}
Publish ok
```



	Device ID	Status	Device Type	Class ID	Date Added
>	123	Disconnected	Node_RED	Device	Oct 29, 2022 9:56 PM
˅	bme2	Disconnected	ESP32_Controller	Device	Oct 26, 2022 8:46 PM