Delivery of Sprint –iv

PROJECT TITLE :
IoT Based Safety Gadget for Child Safety Monitoring and Notification

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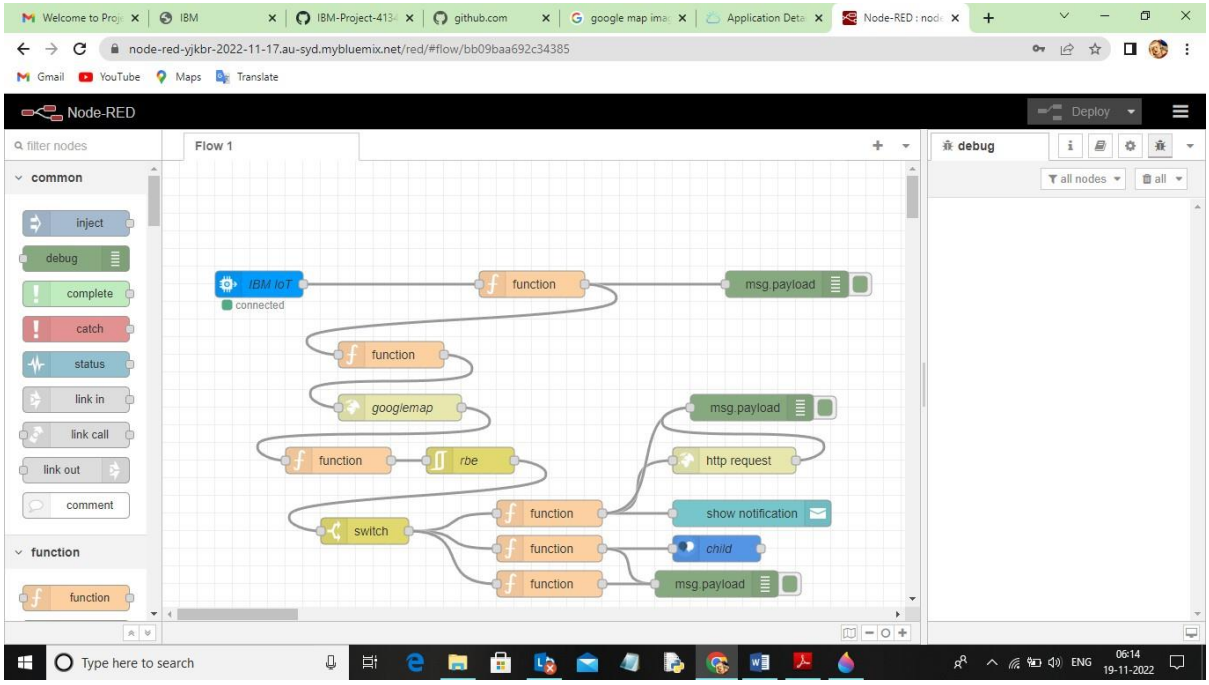
The node red application is developed with the required function



Python Code:

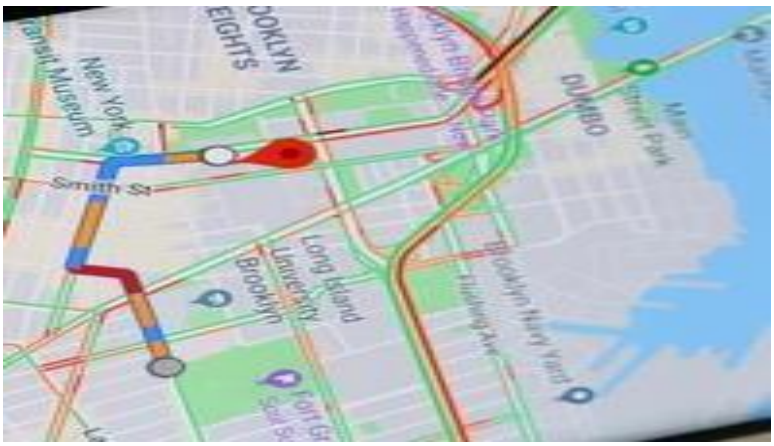
```
#includ<wifi.h>

#include <WiFiClient.h>

#include <PubSubClient.h>

#include <ArduinoJson.h>

#include<TinyGPS++.h>

#define RXD2 16

#define TXD2 17

HardwareSerial neogps(1);


TinyGPSPlus gps; char

arr[100];


const char* ssid = "Redmi"; const

char* password = "krish@08";


#define ID "17cmwk"

#define DEVICE_TYPE "Tracker"

#define DEVICE_ID "gps1"

#define TOKEN "childtracker1"


char server[] = ID ".messaging.internetofthings.ibmcloud.com";

char publish_Topic1[] = "iot-2/evt/Data1/fmt/json"; char

publish_Topic2[] = "iot-2/evt/Data2/fmt/json"; char

authMethod[] = "use-token-auth"; char token[] = TOKEN; char

clientId[] = "d:" ID ":" DEVICE_TYPE ":" DEVICE_ID;


WiFiClient wifiClient;
```

```
PubSubClient client(server, 1883, NULL, wifiClient);


void setup() {
  Serial.begin(115200);
Serial.println();    wifi_init();

}


long previous_message = 0;
void loop() {    client.loop();

  String payload = getLocationPayload();
if(payload=="{}"){

    return;
  }


  Serial.print("Sending payload: ");
Serial.println(payload);    if
(client.publish(publish_Topic1, arr)) {

    Serial.println("Published successfully");
  } else {
    Serial.println("Failed");
  }
  delay(2000);
}
void  wifi_init(){  WiFi.begin(ssid,  password);
neogps.begin(9600,SERIAL_8N1,RXD2,TXD2);
while (WiFi.status() != WL_CONNECTED) {

    delay(500);
```

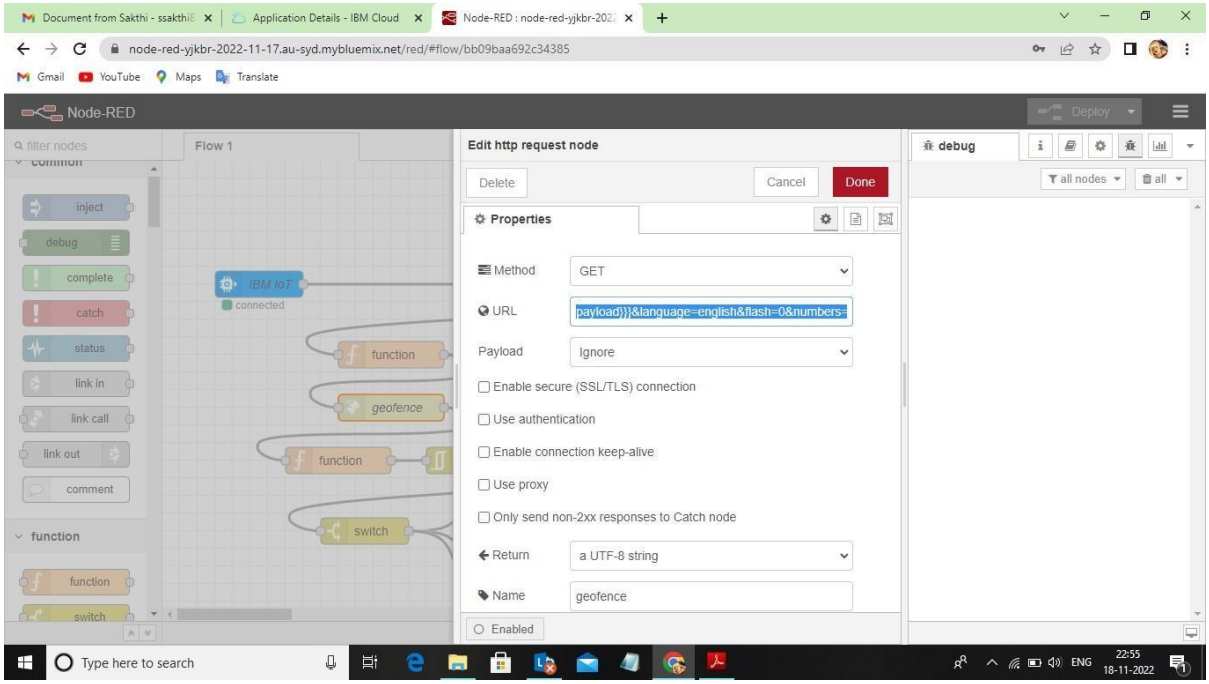
```
    Serial.print(".");
  }
  Serial.println("");
  Serial.println(WiFi.localIP());

  if (!client.connected()) {
    Serial.print("Reconnecting client to ");
Serial.println(server);       while (!client.connect(clientId,
authMethod, token)) {

        Serial.print(".");
delay(500);

    }
    Serial.println("Connected TO IBM IoT cloud!");
  }
}
String getLocationPayload(){    boolean newData =
false;    for(unsigned long start = millis();millis()-
start<1000;){     while(neogps.available()){
if(gps.encode(neogps.read())){         newData = true;

    }
   }
  }
  String payload;    if(newData == true){
newData = false;      payload =
locationPayloadGenerator();

  }
  else{
```

```
    Serial.println("No data");
payload ="{}";

   }

   return payload;
}
String locationPayloadGenerator(){ String payload = "{}";
if(gps.location.isValid()){    float lat = gps.location.lat();    float lon =
gps.location.lng();    payload = "{\"latitude\" : "+String(lat)+",\"longitude\" :
"+String(lon)+"}";    create_json(lat,lon);

 }

 return payload;
}
void create_json(float lat,float lon){
StaticJsonDocument<100> doc;
JsonObject root = doc.to<JsonObject>();
root["name"]="Child"; root["latitude"] =
lat; root["longitude"] = lon;
serializeJsonPretty(doc,arr);

}
```

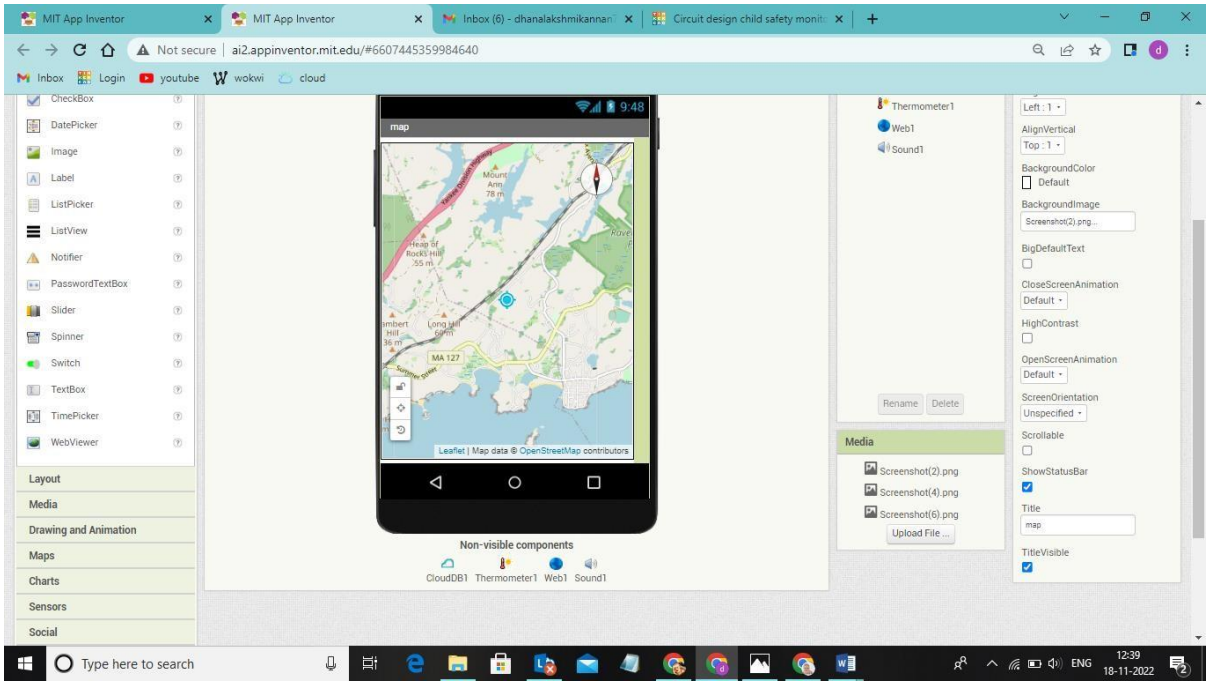
Create a geofence:



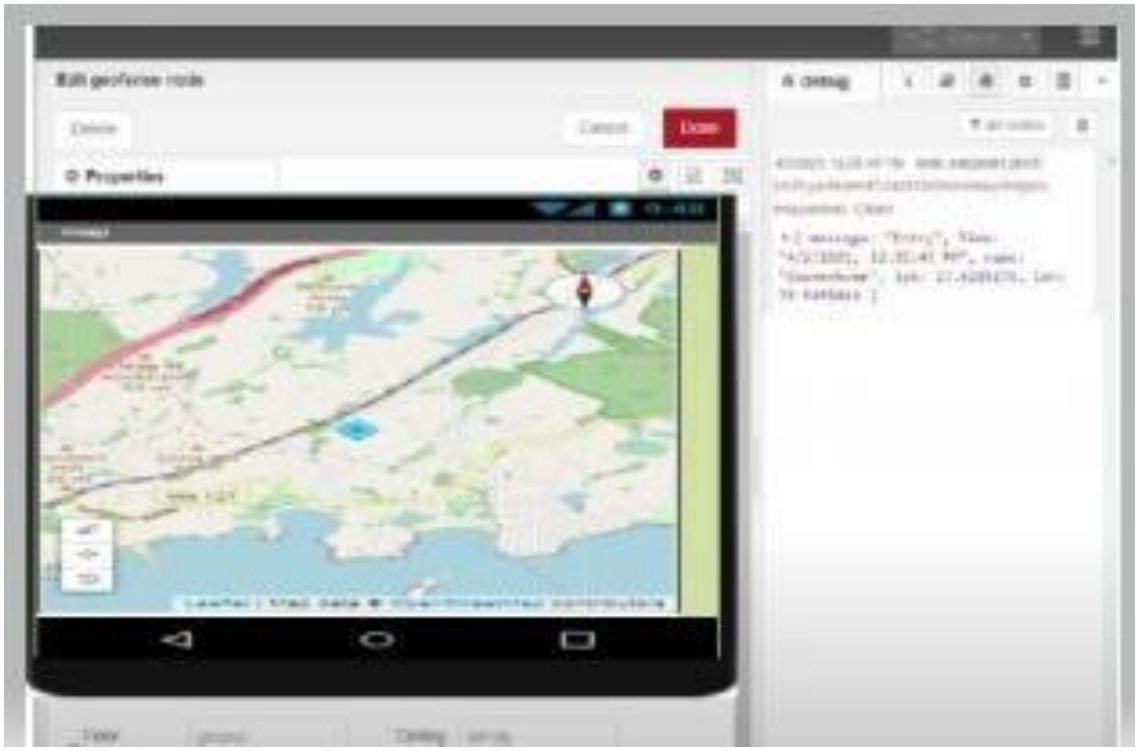
Edit the http request URL



Locate the child.



Create the geofence code:



The web application is developed.