Project Development Phase

Date	*10 November 2022*
Team ID	*PNT2022TMID52173*
Project Name	*IoT based safety gadget for child monitoring and notification*
Maximum Marks	*8 Marks*

Sprint1: Establish Connection Between The Gadget And The Device

This sprint explains how to establish a connection between the gadget and the device.The user puts the gadget into pairing mode.This procedure depends on the gadget.For example,a button gadget might use a long press.If the gadget has a touch screen,A user could enable pairing through an option on the screen.After finding the device and connecting to it.The device pairs with the gadget using the portable hotspot connection,when pairing is complete,the gadget and the device do not need to be paired again even after they disconnected,unless they have become unpaired.The gadget responds with a discover,response event that,along with other information.In this project the gadget will act as a transmitter it will send continuous data to the receiver which is in stable state and the receiver range can be enhanced by using a antenna upto 1 km and the range covered by the receiver will act as a Geo-fence.If the gadget exits the Geo-fence it will have to return in certain period of time if it can't able to reach the geo-fence In the certain time the receiver will alert the user's mobile via notification.

Transmitter Code:

```
#include <SPI.h>
#include <nRF24L01.h>
#include <RF24.h>
RF24 radio(9, 10); // CE, CSN
const byte address[6] = "00001";

void setup()
{
   Serial.begin(9600);
   radio.begin();
   radio.openWritingPipe(address);
   radio.setPALevel(RF24_PA_MIN);
   radio.stopListening();
}
void loop()
{


const char text[] = "CONNECTED ";
```

```
radio.write(&text, sizeof(text));
Serial.println("safe zone");

}
```

Receiver code:

```
 #include <Wire.h>
 #include <LiquidCrystal_I2C.h>
 #include <SPI.h>
 #include <nRF24L01.h>
 #include <RF24.h>

 RF24 radio(9, 10); // CE, CSN

 const byte address[6] = "00001";
 const int ENA = 6;
 const int ENB = 5;

 LiquidCrystal_I2C lcd(0x27,20,4);

 void setup()
```

```
{
  pinMode(8, OUTPUT);
  pinMode(7, OUTPUT);
  pinMode(4, OUTPUT);
  pinMode(3, OUTPUT);
  pinMode (ENA, OUTPUT);
  pinMode (ENB, OUTPUT);

  Serial.begin(9600);

  radio.begin();
  radio.openReadingPipe(0, address);
  radio.setPALevel(RF24_PA_MIN);
  radio.startListening();

  lcd.init();
  lcd.init();
  lcd.backlight();
}
void loop()
```

```
{
  if (radio.available())
  {
    char text[32] = "";
    radio.read(&text, sizeof(text));
    Serial.println(text);

    lcd.setCursor(0,0);
    lcd.print("   CONNECTED    ");

    digitalWrite(8,HIGH);
    digitalWrite(7,LOW);
    digitalWrite(4,HIGH);
    digitalWrite(3,LOW);
    analogWrite(ENA,150);
    analogWrite(ENB,150);
  }
  else
  {
        digitalWrite(8,HIGH);
```

```
    digitalWrite(7,LOW);
    digitalWrite(4,HIGH);
    digitalWrite(3,LOW);
    analogWrite(ENA,255);
    analogWrite(ENB,255);

    Serial.println("OUT OF RANGE");

    lcd.setCursor(0,0);
    lcd.print("  CHECKING THE   ");
    lcd.setCursor(0,1);
    lcd.print("    SERVER      ");
  }
}
```