

CODE TO PREDICTIVE MAINTENANCE FOR MACHINERY:

```
1  #define BLYNK_TEMPLATE_ID "TMPL3I8X2JIUU"
2  #define BLYNK_TEMPLATE_NAME "Earthquake Alert"
3  #define BLYNK_AUTH_TOKEN "oLryH3aqHrDAztuliToxVh8po9SoPpp"
4
5
6  #define BLYNK_PRINT Serial
7
8  #define pinBuzzer 2
9  #define greenLED 4
10 #define redLED 5
11
12 #include <WiFi.h>
13 #include <WiFiClient.h>
14 #include <BlynkSimpleEsp32.h>
15 #include <Adafruit_MPU6050.h>
16 #include <Adafruit_Sensor.h>
17 #include <Wire.h>
18
19 Adafruit_MPU6050 mpu;
20
21
22 char auth[] = BLYNK_AUTH_TOKEN;
23
24
25 char ssid[] = "wokwi-GUEST";
26 char pass[] = "";
27
28 BlynkTimer timer;
29
30 void myTimerEvent()
31 {
32   Blynk.virtualWrite(V2, millis() / 1000);
```

```
34
35 void setup()
36 {
37   Serial.begin(115200);
38   Blynk.begin(auth, ssid, pass);
39   pinMode(pinBuzzer, OUTPUT);
40   pinMode(greenLED, OUTPUT);
41   pinMode(redLED, OUTPUT);
42
43
44   timer.setInterval(1000L, myTimerEvent); //Starting a timer
45
46   if (!mpu.begin()) {
47     Serial.println("Failed to find MPU6050 chip");
48     while (1) {
49       delay(10);
50     }
51   }
52   Serial.println("MPU6050 Found!");
53
54   mpu.setAccelerometerRange(MPU6050_RANGE_16_G);
55   mpu.setGyroRange(MPU6050_RANGE_250_DEG);
56   mpu.setFilterBandwidth(MPU6050_BAND_21_HZ);
57   Serial.println("");
58   delay(100);
59 }
60
61
62 void loop()
63 {
64   detect();
65   timer.run();
```

```

66 }
67
68 void detect(){
69     sensors_event_t a, g, temp;
70     mpu.getEvent(&a, &g, &temp);
71
72     int acX = a.acceleration.x;
73     int acY = a.acceleration.y;
74     int acZ = a.acceleration.z;
75
76     if (millis() / 1000 % 10 == 0) {
77         acX = 1000;
78         acY = 1000;
79         acZ = 1000;
80     }
81
82     String v = ",";
83     String x = String(acX);
84     String y = String(acY);
85     String z = String(acZ);
86
87     if(acX && acY && acZ > 0){
88         ledcAttachPin(pinBuzzer, 0);
89         ledcWriteTone(0, 1000);
90         digitalWrite(redLED, HIGH);
91         digitalWrite(greenLED, LOW);
92         Serial.println("Machine in bad condition !!! "+ x + v + y+ v + z);
93         Serial.println("");
94         Blynk.virtualWrite(V0, "Machine in bad condition !!!");
95         Blynk.virtualWrite(V1, 1);
96
97
98     }else{
99         ledcDetachPin(pinBuzzer);
100         Serial.println("SAFE "+ x + v + y+ v + z);
101         digitalWrite(redLED, LOW);
102         digitalWrite(greenLED, HIGH);
103         Serial.println("");
104         Blynk.virtualWrite(V0, "SAFE");
105         Blynk.virtualWrite(V1, 1);
106     }
107     delay(1500);
108     Blynk.run();
109 }

```

OUTPUT:

