

## **SPRINT 2**

|              |  |
|--------------|--|
| Date         | 19 November 2022   |
| Team ID      | PNT2022TMID48398   |
| Project Name | IoT Based Safety Gadget for Child Safety Monitoring and Notification |

### **ALGORITHM:**

- Import Packages
- Create 'myConfig' location
- Implement the wiotp.sdk.device.DeviceClient
- Run a while Loop
- Finally set the latitude and longitude range
- Desired result Obtained

### **Modified Version of Code according to main project:**

```
import json
import wiotp.sdk.device
import time
myConfig={
    "identity":{
        "orgId": "hj5fmy", "typeid": "NodeMCU",
        "deviceId": "12345"
    },
```

```
"auth": {  
    "token": "12345678"  
}  
}
```

```
client = wiotp.sdk.device.DeviceClient (config=myConfig, logHandlers=None)  
client.connect()
```

```
while True:
```

```
    name= "Smartbridge" #in area location
```

```
    #latitude- 17.4225176 longitude 78.5450842 #out area location
```

```
    latitude = 17.4219272
```

```
    longitude=70.5400783
```

```
    myData = {'name':name, 'lat':latitude, 'lon': longitude} client.publishEvent  
    (eventId="Status", msgformat="json", data=myData,
```

```
    qos=0, onPublish=None)
```

```
    print ("Data published to IM IoT platfrom: ",myData) time.sleep(5)
```

```
    client.disconnect()
```

### **Reference Code:**

```
import time
```

```
def stopwatch(seconds,d,lspoint):
```

```
    start = time.time()
```

```
    time.clock()
```

```
    elapsed = 0
```

```
    flag = False
```

```
    num = 0
```

```
    while elapsed < seconds:
```

```
elapsed = time.time() - start
print "%02d" % elapsed

if elapsed > d[num] and elapsed < d[num+1] and flag == False:
    x = lspoint[num][0]
    y = lspoint[num][1]
    createpoint(x,y)
    flag = True
    print "Shot Taken"
    print point_in_poly(x,y,polygon)
if elapsed > d[num+1]:
    print "Shot Taken"
    flag == False
    num = num+1
    x = lspoint[num][0]
    y = lspoint[num][1]
    createpoint(x,y)
    print point_in_poly(x,y,polygon)
time.sleep(1)
```

```
def createpoint(x,y):
    crs = "point?crs=epsg:27700&field=id:integer"
    layer = QgsVectorLayer(crs, 'points' , "memory")
    pr = layer.dataProvider()
    pt = QgsFeature()
```

```
point1 = QgsPoint(x,y)
pt.setGeometry(QgsGeometry.fromPoint(point1))
pr.addFeatures([pt])
    layer.updateExtents()
pt = QgsFeature()
QgsMapLayerRegistry.instance().addMapLayers([layer])
```

```
def point_in_poly(x,y,poly):
```

```
    n = len(poly)
```

```
    inside = False
```

```
    p1x,p1y = poly[0]
```

```
    for i in range(n+1):
```

```
        p2x,p2y = poly[i % n]
```

```
        if y > min(p1y,p2y):
```

```
            if y <= max(p1y,p2y):
```

```
                if x <= max(p1x,p2x):
```

```
                    if p1y != p2y:
```

```
                        xints = (y-p1y)*(p2x-p1x)/(p2y-p1y)+p1x
```

```
                    if p1x == p2x or x <= xints:
```

```
                        inside = not inside
```

```
        p1x,p1y = p2x,p2y
```

```
    return inside
```

```
polygon =
```

```
[(512882.78819722467,120811.83924772343),(512960.84437170526,120809.7007223952),
(512960.84437170526,120809.7007223952),(512959.77510904113,120754.09906386107),
(512882.78819722467,120756.2375891893)]
```

```
time_seconds = 70
```

```
x = 512915
y = 120728
intervals = int(time_seconds / 10)
lspoint = []
for i in range(0,intervals+1):
    y1 = y + (i*12.5)
    lspoint.append([x,y1])

f = 10
a = 0
b = intervals+1
d = [x * f for x in range(a, b)]
stopwatch(time_seconds,d,lspoint)
```

