

PROJECT DEVELOPMENT AND DELIVERY OF SPRINT 1

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Project Name	IOT Based Safety Gadget for Child Safety Monitoring & Notification

SPRINT 1

GEOFENCING CODE:

Basic Example 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 [8:02 pm, 11/11/2022] Santhiya Clg: 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]
# update extent of the layer
layer.updateExtents()
# add the second point
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:

```

```

p1x,p1y = p2x,p2y
return inside

#### define the polygon
polygon = =
[(512882.78819722467,120811.83924772343),(512960.84437170526,120809.7
007223952),(512960.
84437170526,120809.7007223952),(512959.77510904113,120754.0990638610
7),(512882.78819722
467,120756.2375891893)]

##### set how long the script will run (70 seconds will get you in and out of
geofence)
time_seconds = 70

##### first coordinate
x = 512915
y = 120728

##### time intervals, 10 seconds between shots / or points
intervals = int(time_seconds / 10)

lspoint = []

##### build the list of coordinates to be plotted
for i in range(0,intervals+1):
    y1 = y + (i*12.5)
    lspoint.append([x,y1])

##### to build the blocks of time in intervals, so we know the number of
intervals (default is 7),

##### we need a list of time intervals [0,10,20,30 etc] to check against the clock
this list is d, f is the
gap ie 10 seconds, a is starting point (0)

### b is the number of intervals + 1 becuae the code will check the the next in
the list

```

```
f = 10
```

```
a = 0
```

```
b = intervals+1
```

```
d = [x * f for x in range(a, b)]
```

```
### Run the stopwatch, or start the program!
```

```
stopwatch(time_second s,d,lspoint)
```