Sprint 1

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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 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]) # 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:
                        inside = not inside
        p1x,p1y = p2x,p2y


    return inside

#### define the polygon polygon
=
[(512882.78819722467,120811.83924772343),(512960.84437170526,120809.7007223952),(512960.
84437170526,120809.7007223952),(512959.77510904113,120754.09906386107),(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 becuase 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_seconds,d,lspoint)
```