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LAMPIRAN

Listing sesor getar SW 420

```python
1    #!/usr/bin/python
2    import RPi.GPIO as GPIO
3    import time
4
5    #GPIO SETUP
6    channel = 17
7    GPIO.setmode(GPIO.BCM)
8    GPIO.setup(channel, GPIO.IN)
9
10   def callback(channel):
11           if GPIO.input(channel):
12                   print "Movement Detected!"
13           else:
14                   print "Movement Detected!"
15
16   GPIO.add_event_detect(channel, GPIO.BOTH, bouncetime=300)  # let us know when the pin goes HIGH or LOW
17   GPIO.add_event_callback(channel, callback)  # assign function to GPIO PIN, Run function on change
18
19   # infinite loop
20   while True:
21           time.sleep(1)
```

Listing code modul GPS 6MV2

```python
import serial
import pynmea2
def parseGPS(str):
    if str.find('GGA') > 0:
        msg = pynmea2.parse(str)
        print "Timestamp: %s -- Lat: %s %s -- Lon: %s %s -- Altitude:
%s %s" %
(msg.timestamp,msg.lat,msg.lat_dir,msg.lon,msg.lon_dir,msg.altitude,m
sg.altitude_units)
serialPort = serial.Serial("/dev/ttyAMA0", 9600, timeout=0.5)
while True:
    str = serialPort.readline()
    parseGPS(str)
```

Listing code lengkap

```
import os

from firebase import firebase

import RPi.GPIO as GPIO

import time

import urllib2


import serial

import string

import pynmea2



GPIO.setmode(GPIO.BCM)

GPIO.setwarnings(False)

GPIO.setup(5, GPIO.OUT)

GPIO.setup(11, GPIO.IN)

print("Loading System ......")

time.sleep(5)

print("Ready Boscuu")



firebase = firebase.FirebaseApplication('https://mcsc-005.firebaseio.com/')
```

```python
#result = firebase.get('/home/maps',None)                    #####untuk mengambil
#result = firebase.post('/coba',{'coba':'okk'})              #####untuk menambahkan
#result = firebase.put('coba','coba','nono')                 #####untuk mengubah
#print(result)


port = "/dev/ttyAMA0"                    # the serial port to which the pi is connected.


#create a serial object
ser = serial.Serial(port, baudrate = 9600, timeout = 0.5)


global lat_in_degrees
global rekayasa_lat
global long_in_degrees


def convert_to_degrees(raw_value):
    decimal_value = raw_value/100.00
    degrees = int(decimal_value)
    mm_mmmm = (decimal_value - int(decimal_value))/0.6
    position = degrees + mm_mmmm
    position = "%.4f" %(position)
```

```
    return position


while 1:

    try:

        data = ser.readline()

    except:

        print("loading") #wait for the serial port to churn out data


    if data[0:6] == '$GPGGA': # the long and lat data are always contained
in the GPGGA string of the NMEA data

        print ("new posistion : ")

        msg = pynmea2.parse(data)


        latval = msg.lat

        concatlat = str(latval)

        print (firebase.put('home/maps','latitude',concatlat))

        longval = msg.lon

        concatlong = str(longval)

        print(firebase.put('home/maps','longitude',concatlong))


        time.sleep(0.5)#wait a little before picking the next data.


    data1 = firebase.get('/home/output/relay',None)
```

```python
if data1 == 'false':

        print("Relay OFF")

        GPIO.output(5, 0)

elif data1 == 'true':

        print("Relay ON")

        GPIO.output(5, 1)


if (GPIO.input(11) == False):

        print("Bergetar");

        os.system('date')

        print(firebase.put('home/sensor','getar','true'))

        time.sleep(10);

        print(firebase.put('home/sensor','getar','false'))

        while 1:


                try:

                        data = ser.readline()

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out data


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```

break

time.sleep(1)

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Coding Lengkap Aplikasi :

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```
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return position




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```
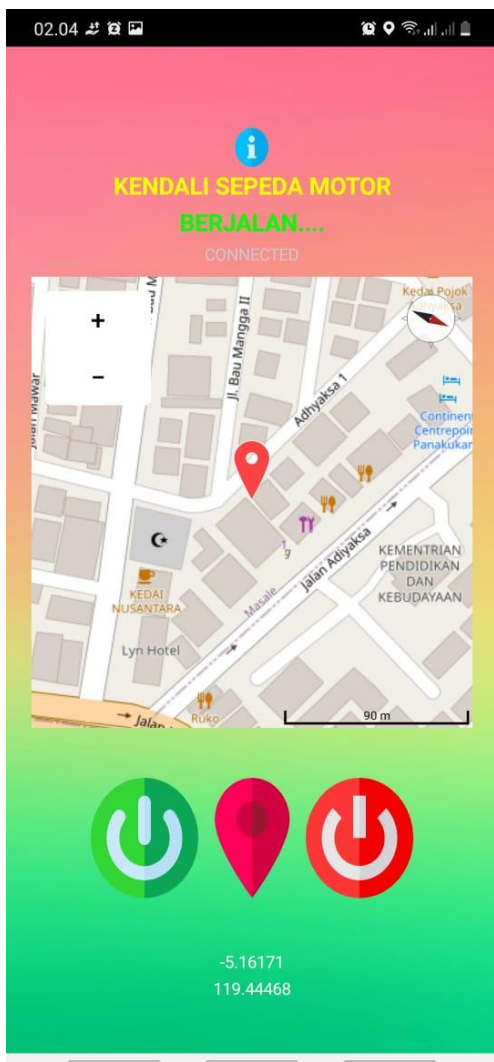
```
os.system('date')

print(firebase.put('home/sensor','getar','true'))

time.sleep(10);

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break

time.sleep(1)


time.sleep(1)
```

Tampilan Aplikasi Smartphone

Tampilan Alat