

ASSIGNMENT-2

ASSIGNMENT : Build Python code, Generate Temperature and Humidity values (Use Random function to generate values) and write a condition to detect an alarm in case of high temperature and high Humidity

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PROGARM

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#1 import
try:
    import configparser
    from six.moves import configparser

import smtplib from email.mime.multipart import
MIMEMultipart from email.mime.text import
MIMEText import requests

#2 variable related to weather API
weather_dict = {'freezing_rain_heavy': 'Heavy rain and snow', 'freezing_rain': 'Rain and snow',
'freezing_rain_light': 'Light rain and snow', 'freezing_drizzle': 'Light drizzle and snow',
'ice_pellets_heavy': 'Heavy ice pellets', 'ice_pellets': 'Normal ice pellets', 'ice_pellets_light': 'Light ice
pellets', 'snow_heavy': 'Heavy snow', 'snow': 'Normal snow', 'snow_light': 'Light snow', 'tstorm':
'Thunder storm', 'rain_heavy': 'Heavy rain', 'rain': 'Normal rain', 'rain_light': 'Light rain'}
url = "https://api.climacell.co/v3/weather/nowcast"
```

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querystring =
{"lat":"1.29027","lon":"103.851959","unit_system":"si","timestep":"60","start_time":"now","fields":"te
mp,humidity,weather_code","apikey":"xxxx"}
```

#3 class class

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EmailSender(): #4

initialization def

__init__(self):

    self.cf = configparser.ConfigParser()

    self.cf.read('./config.ini')      self.sec =
'email'

    self.email = self.cf.get(self.sec, 'email')

    self.host = self.cf.get(self.sec, 'host')      self.port
= self.cf.get(self.sec, 'port')      self.password =
self.cf.get(self.sec, 'password')
```

#5 main function to send email

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def SendEmail(self, recipient):
title = "Home Sweet Home"
```

#6 create a new multipart mime object

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msg = MIME Multipart()      msg['Subject'] =
'[Weather Notification]'      msg['From'] =
self.email      msg['To'] = ', '.join(recipient)
```

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#7 call weather API using requests      response =
requests.request("GET", url, params=querystring)

result = ""

json_data = response.json()

#print(json_data)

#8 loop over each data and check for abnormal weather (rain, snow)

for i in range(len(json_data)):

    if(json_data[i]['weather_code']['value'] in weather_dict):

        if(i == 0):

            result = "%s at the moment. Current temperature is " %
(weather_dict[json_data[i]['weather_code']]['value'])

        else:

            result = "%s in %s hour(s) time. Forecasted temperature is " %
(weather_dict[json_data[i]['weather_code']]['value']), i)

    result += '%s%s while the humidity is about %s%s' % (json_data[i]['temp']['value'],
json_data[i]['temp']['units'], json_data[i]['humidity']['value'], json_data[i]['humidity']['units'])

msgText = MIMEText('<b>%s</b><p>%s</p>' % (title, result), 'html')

msg.attach(msgText)

#9 authenticate and send email
with smtplib.SMTP(self.host, self.port) as smtpObj:

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    smtpObj.ehlo()           smtpObj.starttls()  
  
    smtpObj.login(self.email, self.password)  
  
    smtpObj.sendmail(self.email, recipient, msg.as_string())  
  
    return "Success"  
  
return "Failed"  
  
break
```