PYTHON CODE

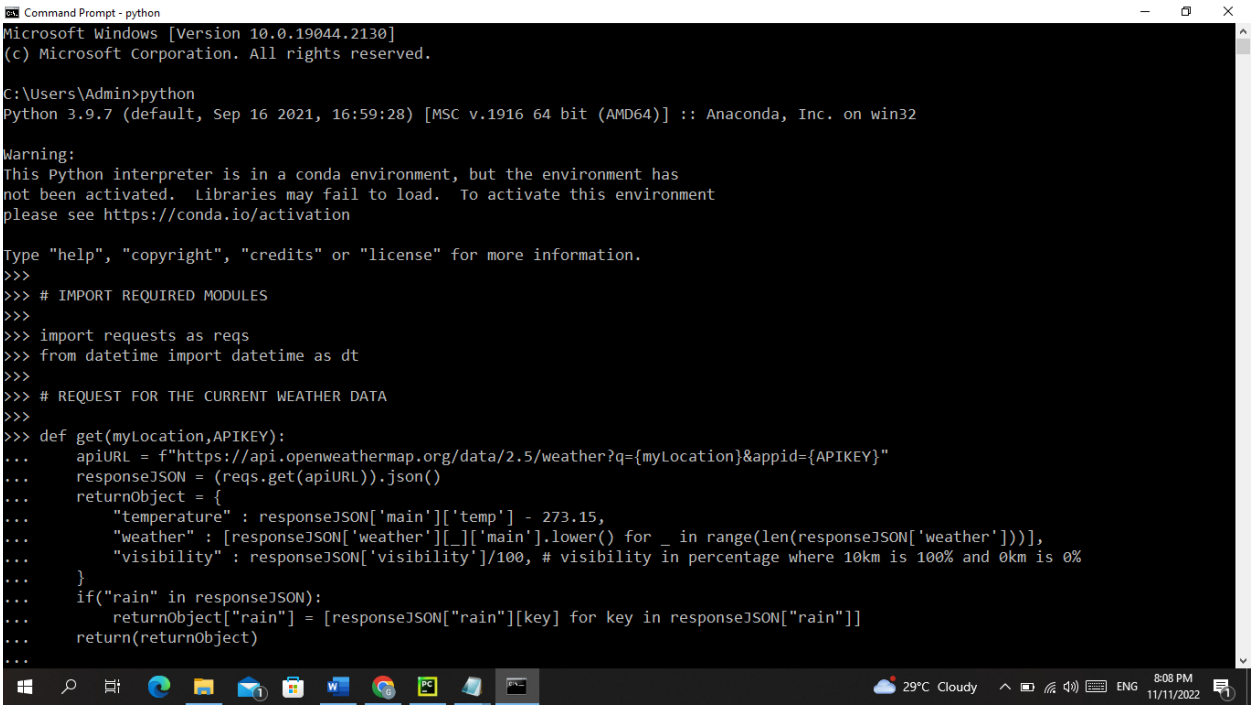
```
import requests as reqs
from datetime import datetime as dt


def get(myLocation,APIKEY):
    apiURL = f"https://api.openweathermap.org/data/2.5/weather?q={myLocation}&appid={APIKEY}"
    responseJSON = (reqs.get(apiURL)).json()
    returnObject = {
        "temperature" : responseJSON['main']['temp'] - 273.15,
        "weather" : [responseJSON['weather'][_]['main'].lower() for _ in range(len(responseJSON['weather']))],
        "visibility" : responseJSON['visibility']/100, # visibility in percentage where 10km is 100% and 0km is 0%
    }
    if("rain" in responseJSON):
        returnObject["rain"] = [responseJSON["rain"][key] for key in responseJSON["rain"]]
    return(returnObject)



# ----------------------------------------------


def processConditions(myLocation,APIKEY,localityInfo):
    weatherData = get(myLocation,APIKEY)


    finalSpeed = localityInfo["usualSpeedLimit"] if "rain" not in weatherData else localityInfo["usualSpeedLimit"]/2
    finalSpeed = finalSpeed if weatherData["visibility"]>35 else finalSpeed/2
```

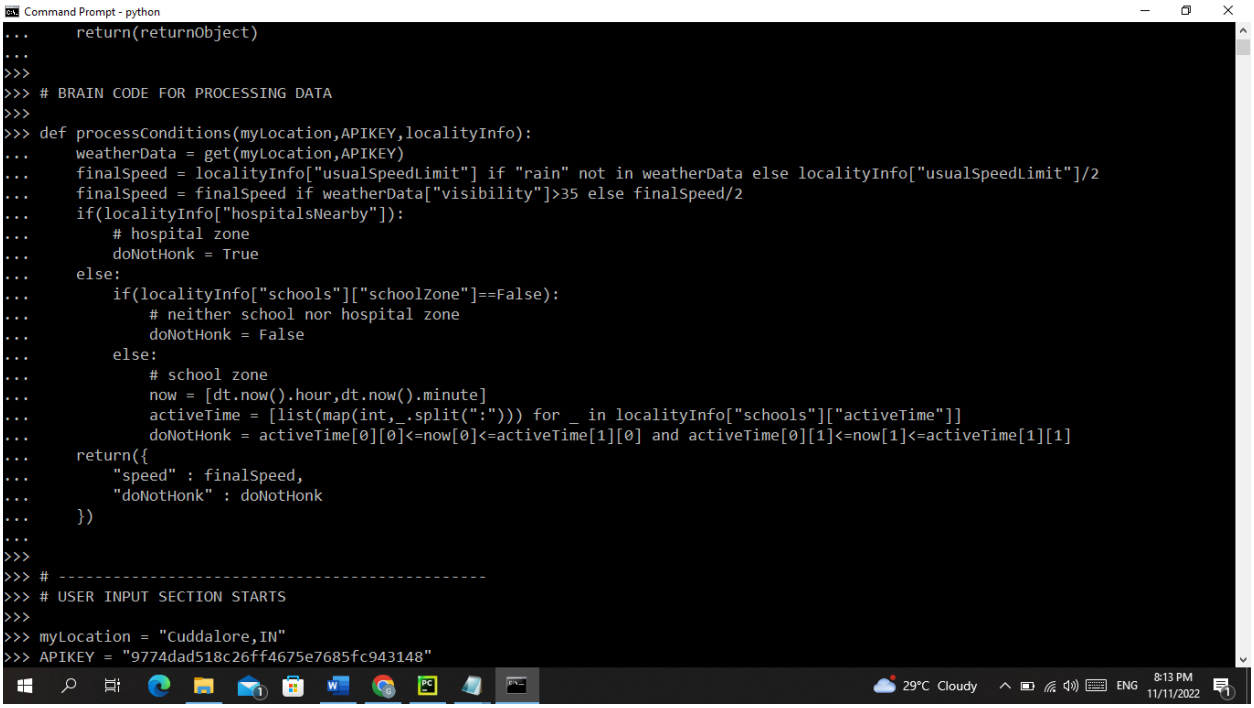
```
    if(localityInfo["hospitalsNearby"]):
        # hospital zone
        doNotHonk = True


 else:
        if(localityInfo["schools"]["schoolZone"]==False):
            # neither school nor hospital zone
            doNotHonk = False
        else:
            # school zone
            now = [dt.now().hour,dt.now().minute]
            activeTime = [list(map(int,_.split(":"))) for _ in localityInfo["schools"]["activeTime"]]
            doNotHonk = activeTime[0][0]<=now[0]<=activeTime[1][0] and
activeTime[0][1]<=now[1]<=activeTime[1][1]


    return({
        "speed" : finalSpeed,
        "doNotHonk" : doNotHonk
    })
# ---------------------------------------------
# USER INPUT SECTION STARTS
myLocation = "Cuddalore,IN"
APIKEY = "9774dad518c26ff4675e7685fc943148"
localityInfo = {
    "schools" : {
        "schoolZone" : True,
        "activeTime" : ["7:00","17:30"] # schools active from 7 AM till 5:30 PM
        },
```

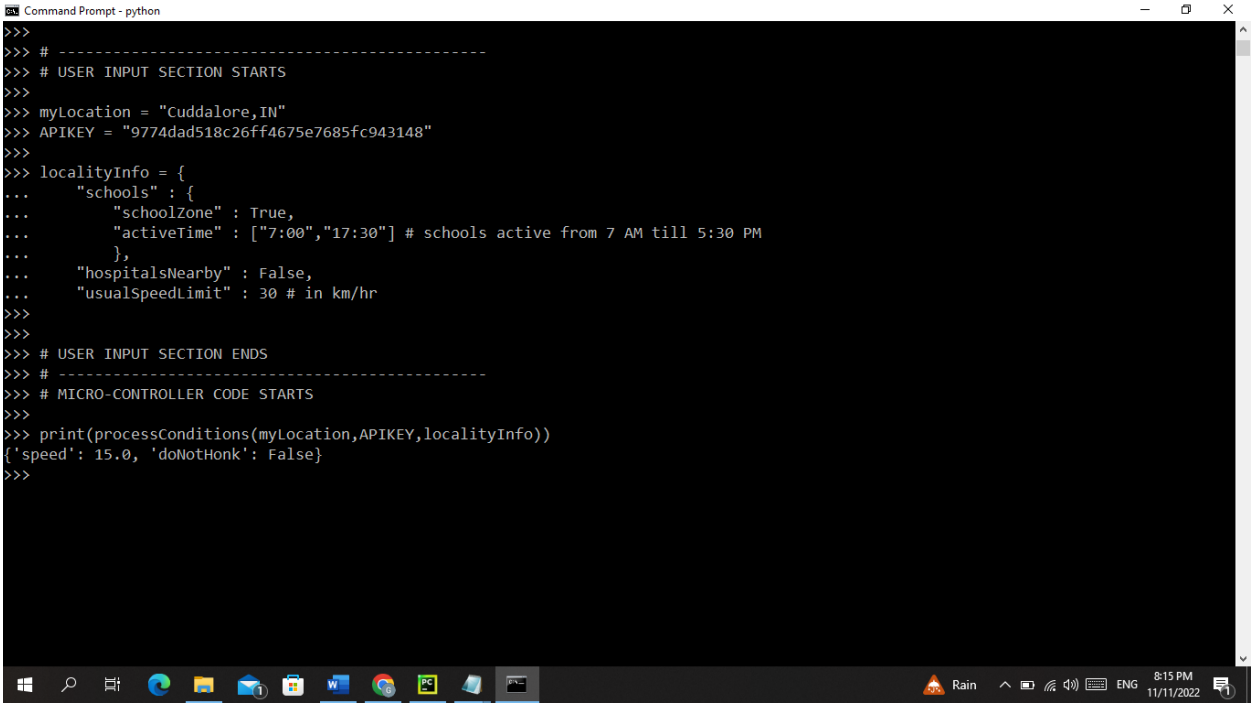
```
    "hospitalsNearby" : False,
    "usualSpeedLimit" : 30 # in km/hr
}
# USER INPUT SECTION ENDS
# ----------------------------------------------


# MICRO-CONTROLLER CODE STARTS
print(processConditions(myLocation,APIKEY,localityInfo))
```

OUTPUT:

{'speed': 15.0, 'doNotHonk': False}




Command Prompt - python
... return(returnObject)
...
>>>
>>> # BRAIN CODE FOR PROCESSING DATA
>>>
>>> def processConditions(myLocation,APIKEY,localityInfo):
... weatherData = get(myLocation,APIKEY)
... finalSpeed = localityInfo["usualSpeedLimit"] if "rain" not in weatherData else localityInfo["usualSpeedLimit"]/2
... finalSpeed = finalSpeed if weatherData["visibility"]>35 else finalSpeed/2
... if(localityInfo["hospitalsNearby"]):
... # hospital zone
... doNotHonk = True
... else:
... if(localityInfo["schools"]["schoolZone"]==False):
... # neither school nor hospital zone
... doNotHonk = False
... else:
... # school zone
... now = [dt.now().hour,dt.now().minute]
... activeTime = [list(map(int,_.split(":"))) for _ in localityInfo["schools"]["activeTime"]]
... doNotHonk = activeTime[0][0]<=now[0]<=activeTime[1][0] and activeTime[0][1]<=now[1]<=activeTime[1][1]
... return({
... "speed" : finalSpeed,
... "doNotHonk" : doNotHonk
... })
...
>>>
>>> # ---
>>> # USER INPUT SECTION STARTS
>>>
>>> myLocation = "Cuddalore,IN"
>>> APIKEY = "9774dad518c26ff4675e7685fc943148"
29°C Cloudy
ENG
8:13 PM
11/11/2022


Command Prompt - python
>>>
>>> # ---
>>> # USER INPUT SECTION STARTS
>>>
>>> myLocation = "Cuddalore,IN"
>>> APIKEY = "9774dad518c26ff4675e7685fc943148"
>>>
>>> localityInfo = {
... "schools" : {
... "schoolZone" : True,
... "activeTime" : ["7:00","17:30"] # schools active from 7 AM till 5:30 PM
... },
... "hospitalsNearby" : False,
... "usualSpeedLimit" : 30 # in km/hr
>>>
>>>
>>> # USER INPUT SECTION ENDS
>>> # ---
>>> # MICRO-CONTROLLER CODE STARTS
>>>
>>> print(processConditions(myLocation,APIKEY,localityInfo))
{'speed': 15.0, 'doNotHonk': False}
>>>
Rain
ENG
8:15 PM
11/11/2022