SPRINT - 1

Team ID	PNT2022TMID22101
Project Name	Project – SIGNS WITH SMART CONNECTIVITY FOR BETTER ROAD SAFETY
Maximum Marks	4 Marks

Wheather.py

```
# Python code

import requests as reqs

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)
```

Brain.py

```
# Python code

# IMPORT SECTION STARTS

import weather

from datetime import datetime as dt

# IMPORT SECTION ENDS

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




# UTILITY LOGIC SECTION STARTS
```

```
def processConditions(myLocation,APIKEY,localityInfo):
    weatherData = weather.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
    })


# UTILITY LOGIC SECTION ENDS
```

Main.py

```
# Python code
# IMPORT SECTION STARTS
import brain
# IMPORT SECTION ENDS
# ------------------------------------------------
# USER INPUT SECTION STARTS
```

```
myLocation = "Chennai,IN"
APIKEY = "be42a38741dd6a72d994a4bc7d9a5025”

localityInfo = {
   "schools" : {
      "schoolZone" : True,
      "activeTime" : ["7:00","17:30"] # schools active from 7 AM till 5:30 PM
      },
   "hospitalsNearby" : False,
   "usualSpeedLimit" : 40 # in km/hr
}

# USER INPUT SECTION ENDS
# ----------------------------------------------
# MICRO-CONTROLLER CODE STARTS

print(brain.processConditions(myLocation,APIKEY,localityInfo))

'''
MICRO CONTROLLER CODE WILL BE ADDED IN SPRINT 2 AS PER OUR PLANNED SPRINT SCHEDULE
'''

# MICRO-CONTROLLER CODE ENDS
```