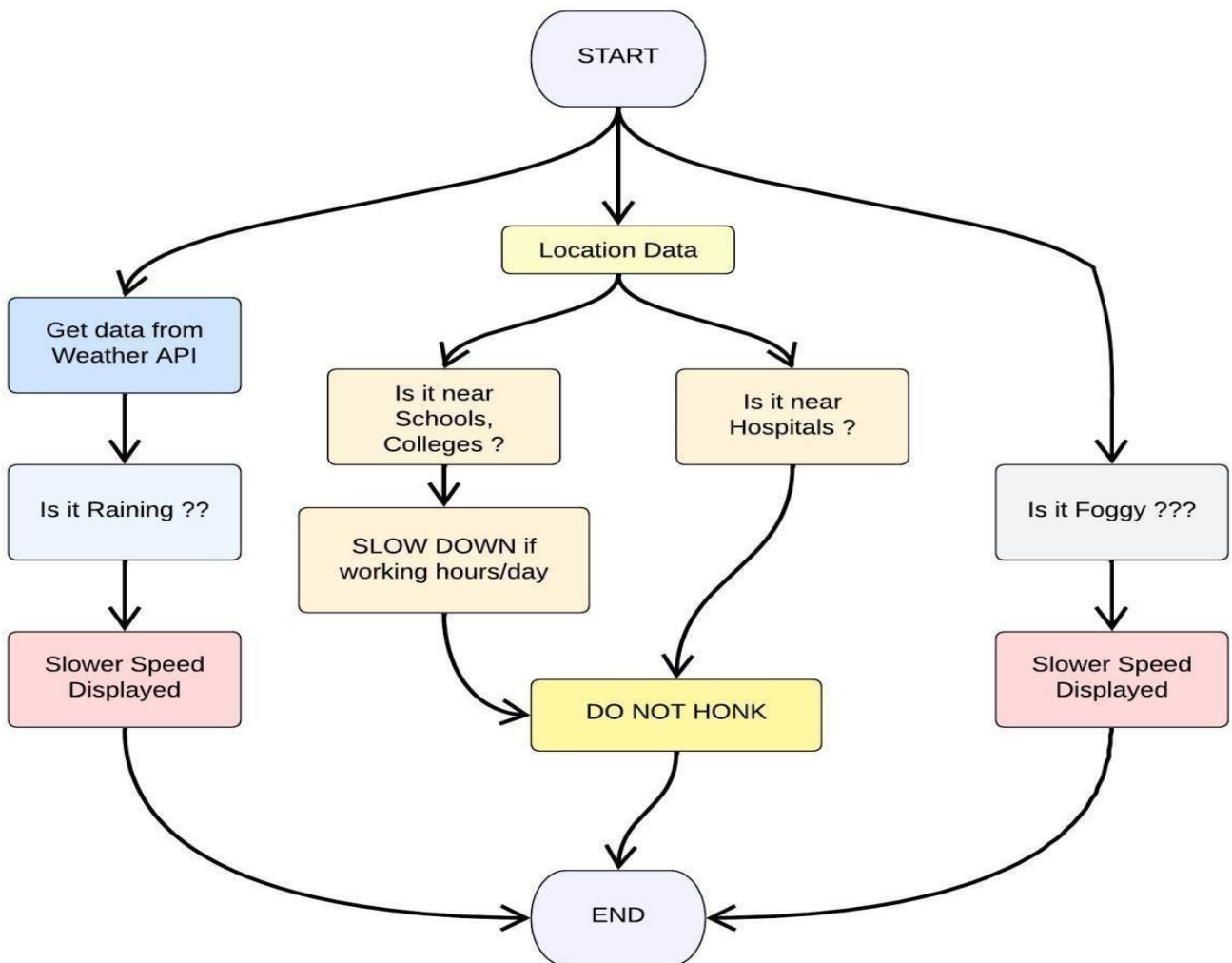


## SPRINT 1

Team ID	PNT2022TMID50083
Project Name	Signs with smart connectivity for Better road safety

### Code Flow :



## # brain.py

```
# 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"]):
        # hzone of the hospital
        doNotHonk = True
    else:
        if(localityInfo["schools"]["schoolZone"]==False):
            # neither hospital zone nor school
            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
            })
```

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```
#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
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    if(localityInfo["hospitalsNearby"]):
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            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
    })
```

## # weather.py

```
import requests as reqs
def get(myLocation,APIKEY):
    apiURL =
    "https://api.openweathermap.org/data/2.5/weather?q={myLocation}&appid={APIKEY}"
    responseJSON = (reqs.get(apiURL)).json()
    responseObject = {
        "temperature" : responseJSON['main']['temp'] - 273.15,
        "weather" : [responseJSON['weather'][_]['main'].lower() for _ in
range(len(responseJSON['weather']))],
        "visibility" : responseJSON['visibility']/100,
    }
    if("rain" in responseJSON):
        responseObject["rain"] = [responseJSON["rain"][key] for key in responseJSON["rain"]]
    return(responseObject)
```

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```
import requests as reqs

def get(myLocation,APIKEY):
    apiURL = "https://api.openweathermap.org/data/2.5/weather?q={myLocation}&appid={APIKEY}"
    responseJSON = (reqs.get(apiURL)).json()
    responseObject = {
        "temperature" : responseJSON['main']['temp'] - 273.15,
        "weather" : [responseJSON['weather'][_]['main'].lower() for _ in range(len(responseJSON['weather']))],
        "visibility" : responseJSON['visibility']/100,
    }
    if("rain" in responseJSON):
        responseObject["rain"] = [responseJSON["rain"][key] for key in responseJSON["rain"]]
    return(responseObject)
```

## # main.py

```
import brain
# IMPORT SECTION ENDS
# USER INPUT SECTION STARTS
myLocation = "Chennai,IN"
APIKEY = "c7388b7d0d823ee0ee0be65c6fd40411"
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
while True :
    print(brain.processConditions(myLocation,APIKEY,localityInfo))
```

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```
import brain
# IMPORT SECTION ENDS
# USER INPUT SECTION STARTS
myLocation = "Chennai,IN"
APIKEY = "c7388b7d0d823ee0ee0be65c6fd40411"
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
while True :
    print(brain.processConditions(myLocation,APIKEY,localityInfo))
```

## Output :

# Code Output

**{'speed': 40, 'doNotHonk': False}**