SPRINT - 4

Date	13 NOV 2022
Team ID	PNT2022TMID01880
Project Name	Smart Waste Management System for Metropolitan Cities

1, Simulate python code in Python IDE software to transmit data to IBM Watson IOT platform

Python code:

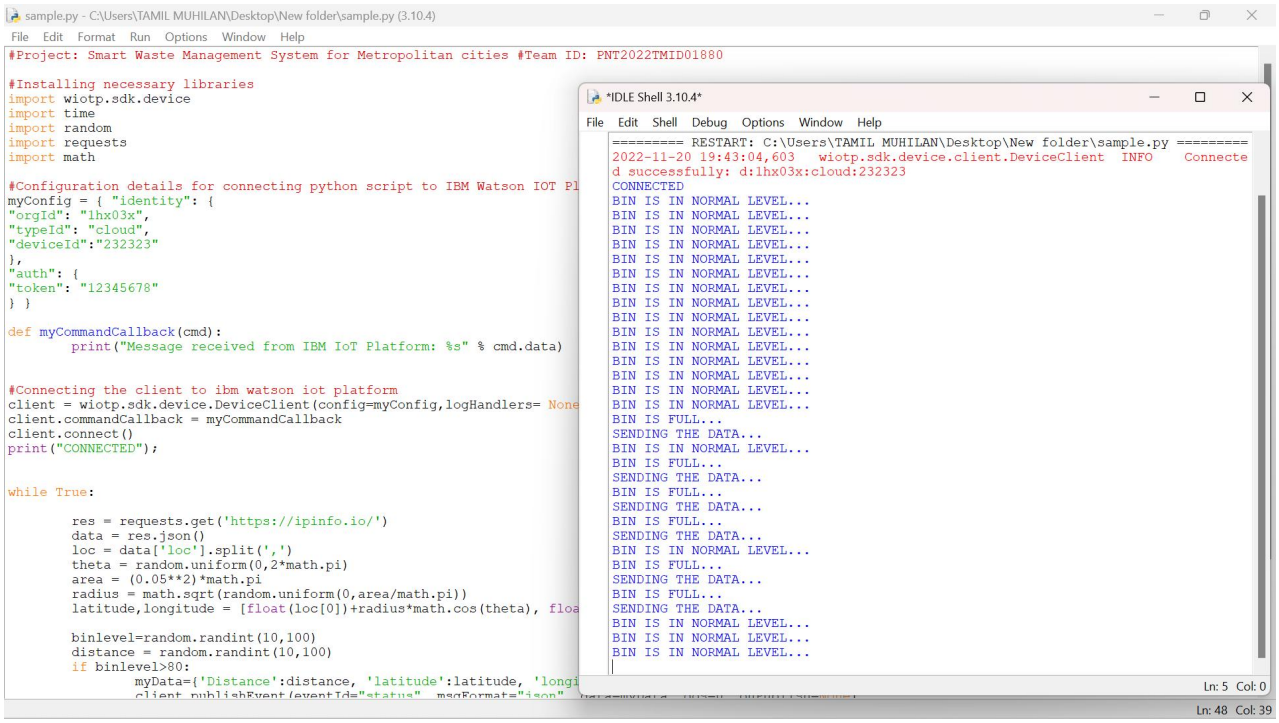
smartbin.py:

```
#Project: Smart Waste Management System for Metropolitan cities
#Team ID: PNT2022TMID01880

#Installing necessary libraries
import wiotp.sdk.device
import time
import random
import requests
import math
#Configuration details for connecting python script to IBM Watson
IOT Platform
myConfig = { "identity": {
"orgId": "1hx03x",
"typeId": "cloud",
"deviceId":"232323"
},
"auth": {
"token": "12345678"
} }
def myCommandCallback(cmd):
print("Message received from IBM IoT Platform: %s" % cmd.data)
#Connecting the client to ibm watson iot platform
client =
wiotp.sdk.device.DeviceClient(config=myConfig,logHandlers= None)
client.commandCallback = myCommandCallback
client.connect()
print("CONNECTED");
```

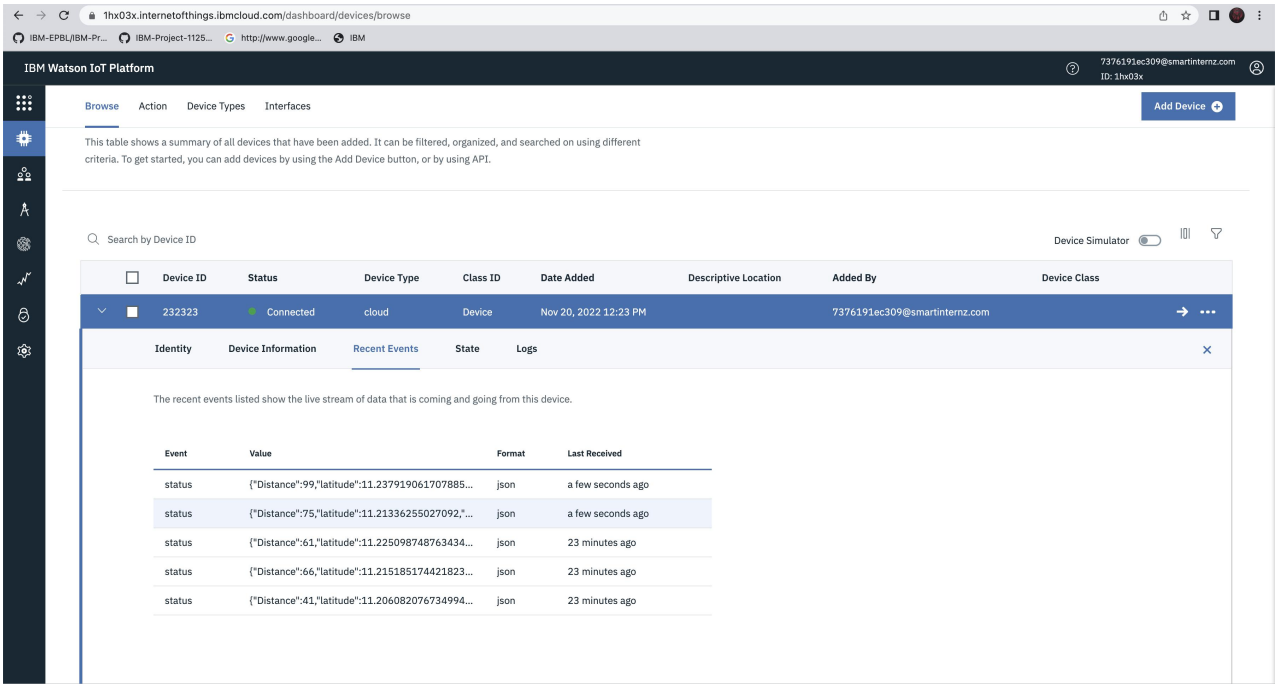
```
while True:
res = requests.get('https://ipinfo.io/')
data = res.json()
loc = data['loc'].split(',')
theta = random.uniform(0,2*math.pi)
area = (0.05**2)*math.pi
radius = math.sqrt(random.uniform(0,area/math.pi))
latitude,longitude = [float(loc[0])+radius*math.cos(theta),
float(loc[1])+radius*math.sin(theta)]
binlevel=random.randint(10,100)
distance = random.randint(10,100)
if binlevel>80:
myData={'Distance':distance, 'latitude':latitude,
'longitude':longitude,'binlevel':binlevel}
client.publishEvent(eventId="status", msgFormat="json",
data=myData, qos=0, onPublish=None)
client.commandCallback = myCommandCallback
print("BIN IS FULL...")
print("SENDING THE DATA...")
time.sleep(2)
else :
print("BIN IS IN NORMAL LEVEL...")
time.sleep(2)
#Disconnect the client connection
client.disconnect()
```

Python IDE output:



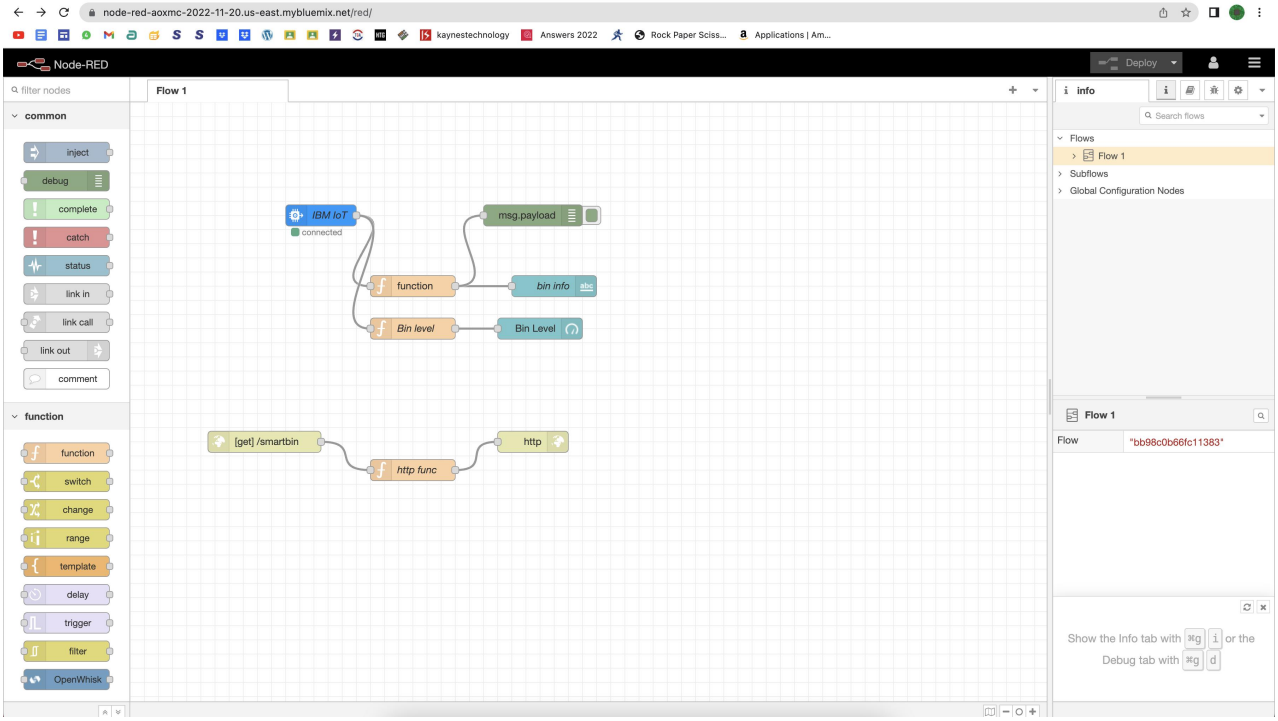
2. Data is transferred to IBM Watson IoT platform.

IBM Platform output:

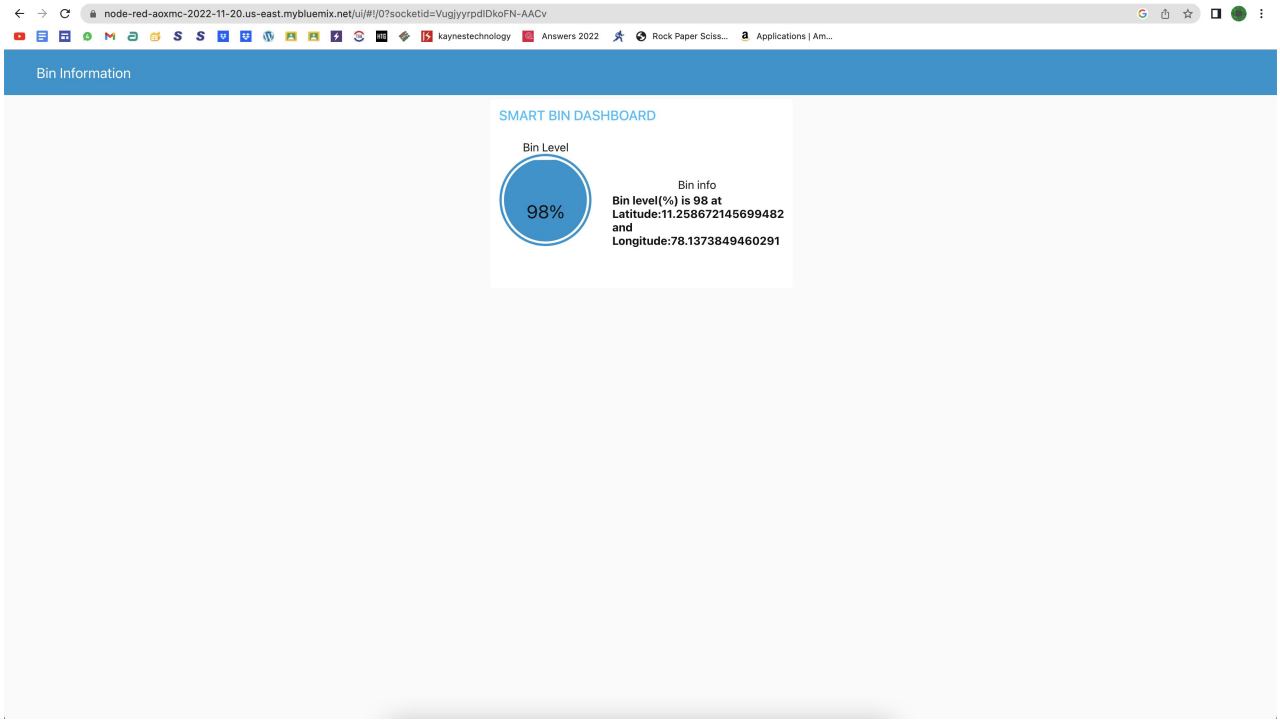


3. Node-RED Connection setup for data transmission from IBM Watson IoT platform to Node-RED dashboard and viewing in Web UI .

Node-RED:

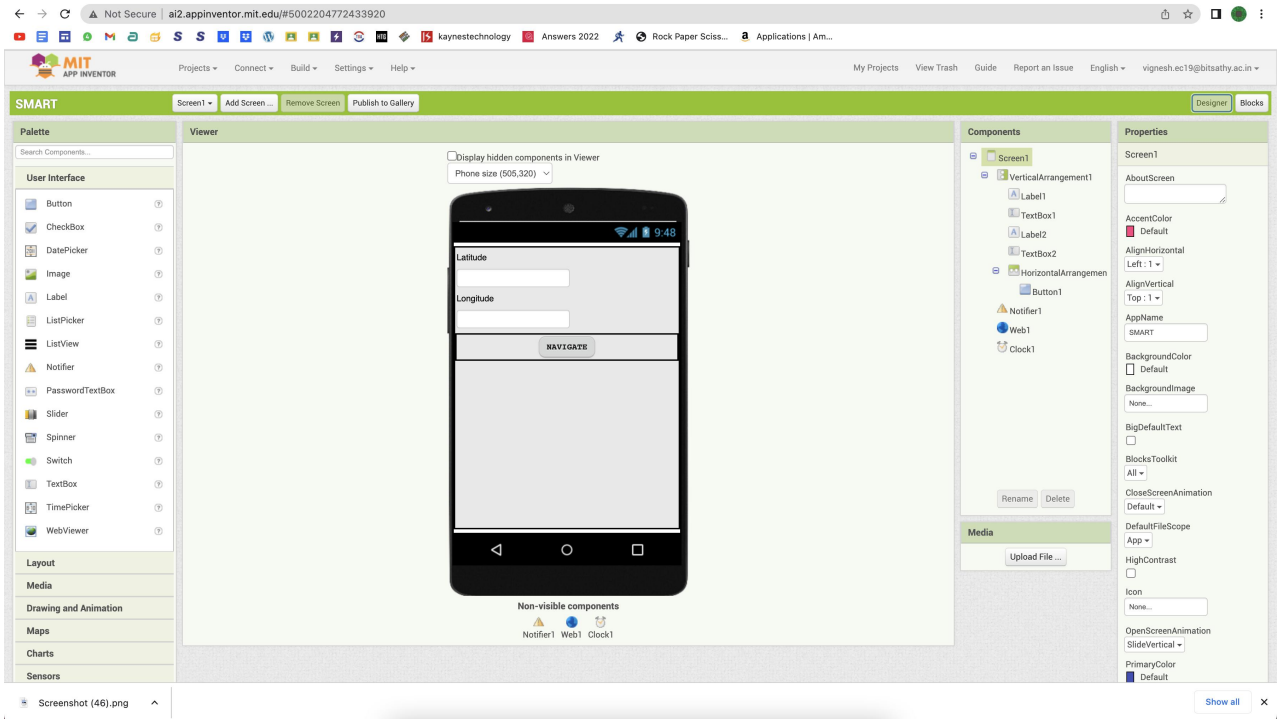


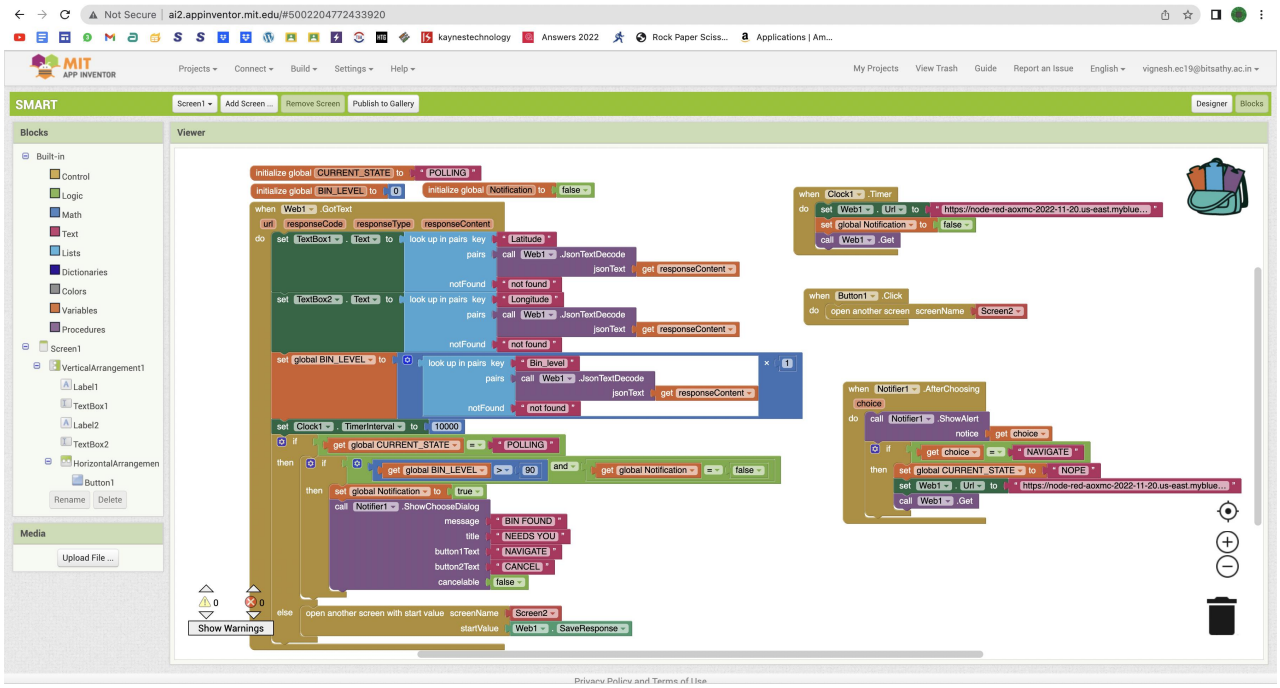
Web UI:



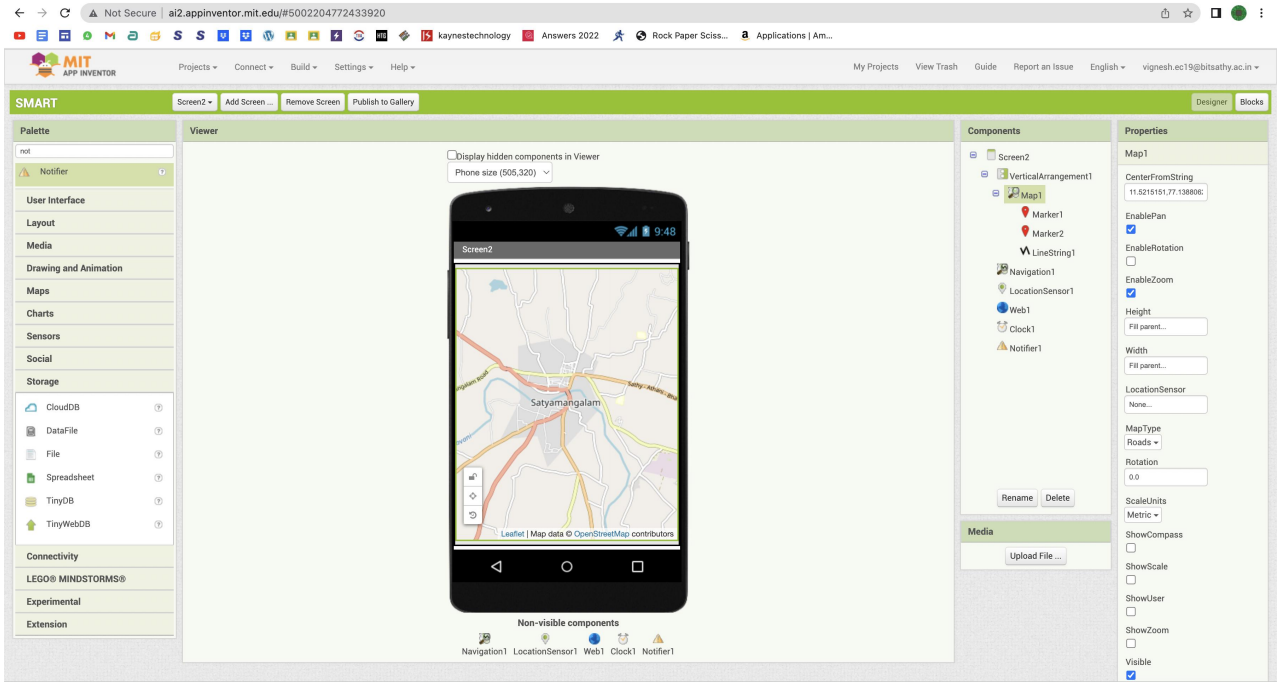
4. App is created using MIT App inventer

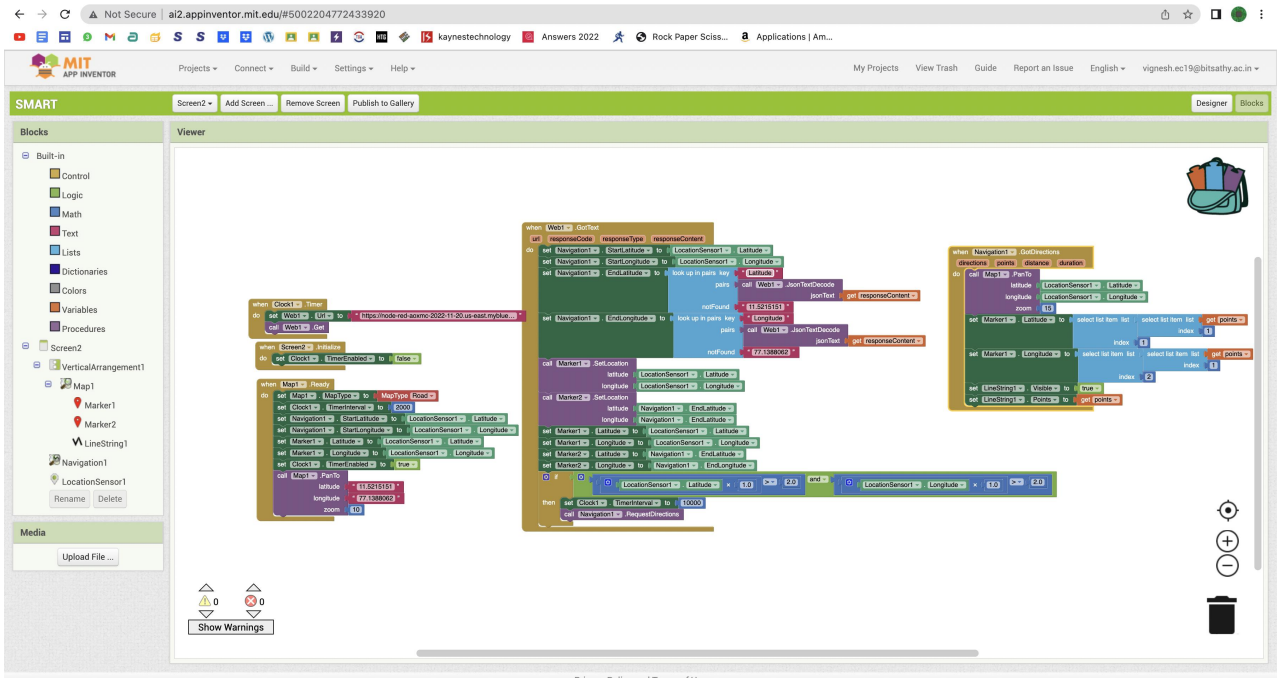
Home Screen:


Not Secure | ai2.appinventor.mit.edu/#5002204772433920
MIT APP INVENTOR
SMART
Palette
Viewer
Components
Properties
Latitude
Longitude
NAVIGATE
Non-visible components
Notifier1 Web1 Clock1
Screenshot (46).png
Show all


Not Secure | ai2.appinventor.mit.edu/#5002204772433920
MIT APP INVENTOR
SMART
Blocks
Viewer
Show Warnings

Navigation Screen:





5. Created Application using MIT Inventor and installed in phone

Sample Outputs