Task-1:

Milestone-1: Project Scope, Schedule, Team & Deliverable

Project Summary:

Agriculture plays a crucial role in the life of an economy. It is the backbone of our economic system, so improving the quality and way of production is crucial. Here comes the Smart Agriculture system.

Smart agriculture helps in automated farming, collection of data from the field and then analyses it so that the farmer can make accurate decision in order to grow high quality crop.

IoT based Smart Farming also improves the entire Agriculture system by monitoring the field in real-time. With the help of sensors and interconnectivity, the Internet of Things in Agriculture has not only saved the time of the farmers but has also reduced the extravagant use of resources such as Water and Electricity.

So in this project I have developed a mobile application using which a farmer can monitor the temperature, humidity and soil moisture parameters along with weather forecasting details. Based on these details he can water the crops by controlling the motors through the app.

Project Requirements:

- Github and slackAccount
- IBM Account
- Node-RED
- Python
- Open Weather API
- MIT app inventor

Functional Requirements:

Sno	Functional requirement description
1.	Farmer must be able to receive the weather forecast every hour.
2.	The mobile app must be user friendly to the farmer
3.	Farmer must be able to monitor the temperature, humidity and soil moisture parameters along with weather forecasting details.
4.	Based on the forecast parameters he must be able to control the motor if needed.

Technical Requirements:

- The farmer must have a mobile to use the app.
- He must have basic knowledge to operate the app.
- The app must be user friendly.
- The app must be reliable and efficient.

Software Requirements:

- IBM cloud Account
- Node-RED
- Watson IoT platform
- python
- IoT simulator
- Open Weather API

Project Deliverables:

An efficient and reliable app to monitor the temperature, humidity, soil moisture and control the motors to turn water on/off if needed.

Project Team:

JEEVAK RAJ S-INTERNSHIP(SB15881)

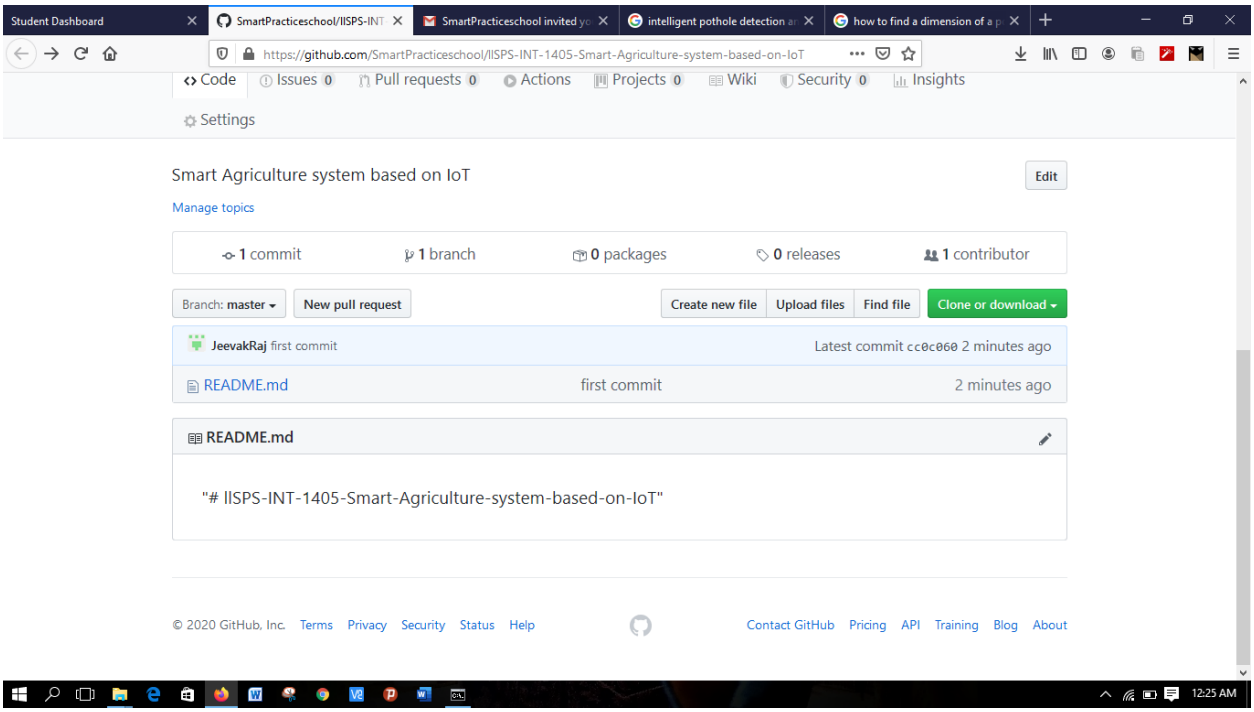
Project Schedule:

- creating all the accounts needed - May 18
- installing required software - May 20
- connecting to IoT simulator and installing required nodes- May 22
- setting up Open Weather API - May24
- Building a Web App - May 30
- Configuring device and controlling motor - June 5
- remaining work -June 10
- Report making -everday

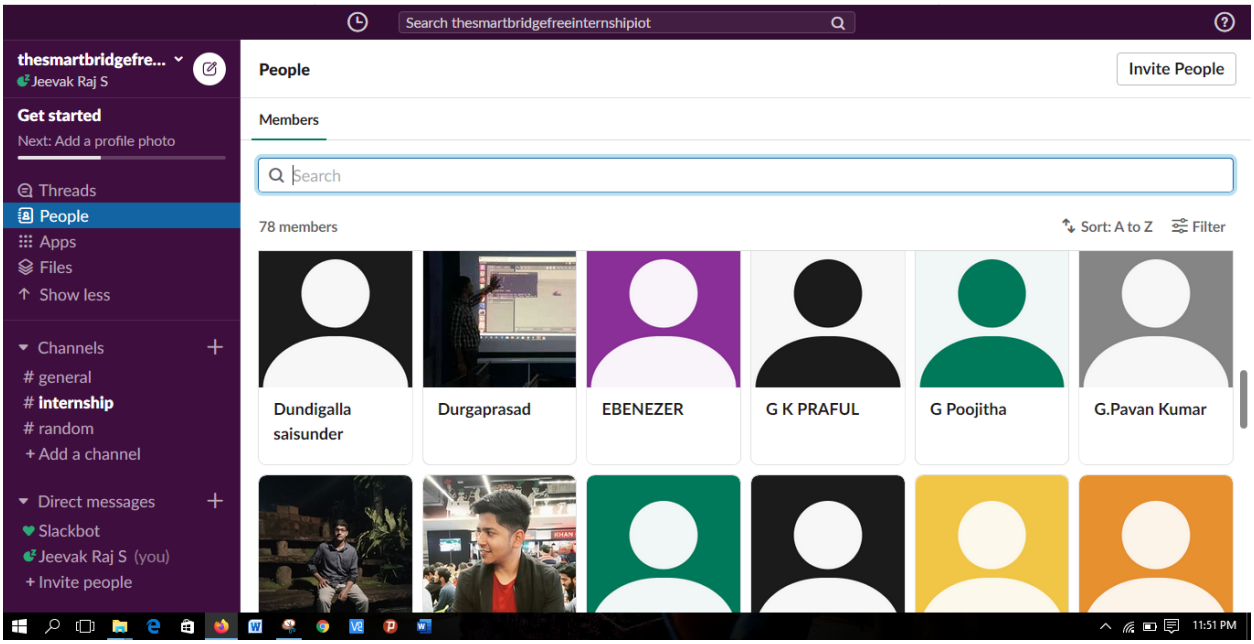
Milestone-2:

Setup the development environment

GITHUB Account:



Slack Account:



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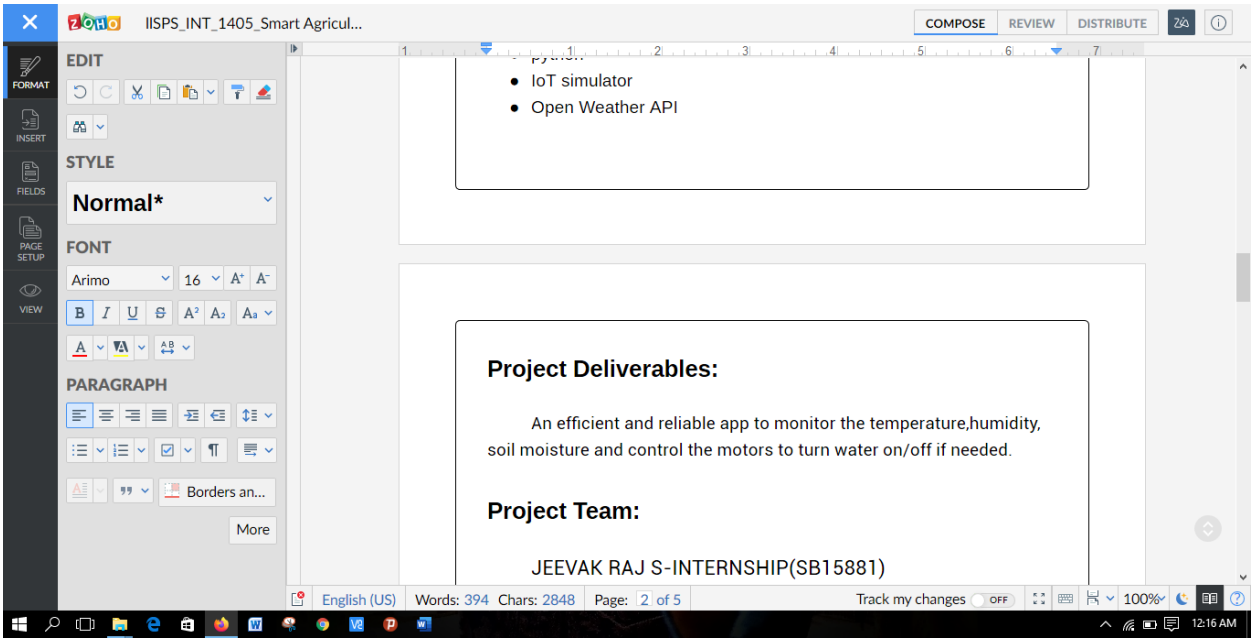
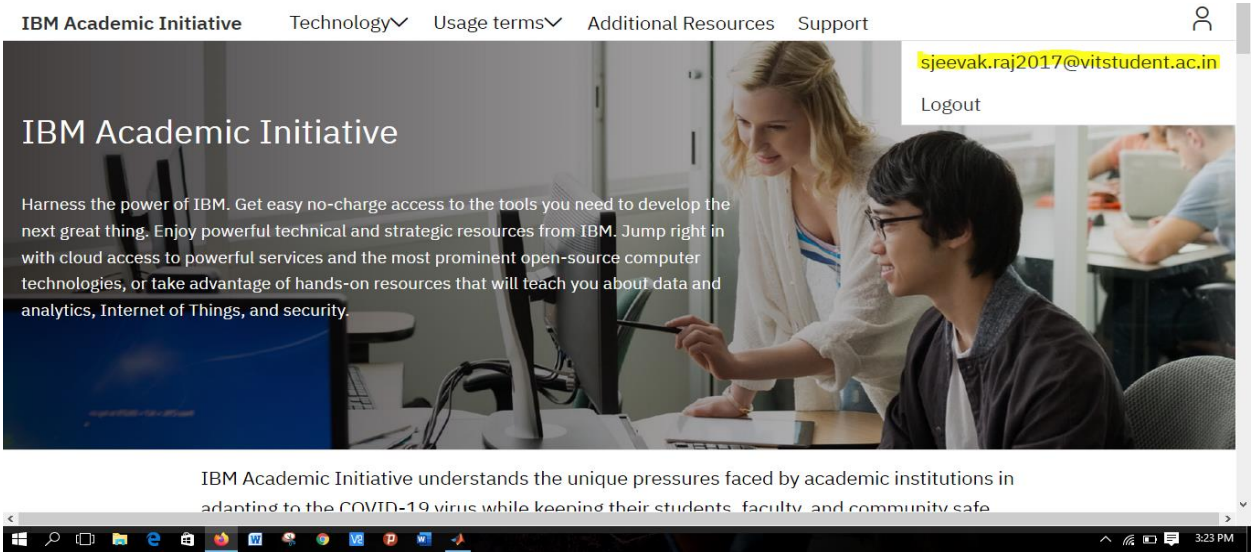


Task-2

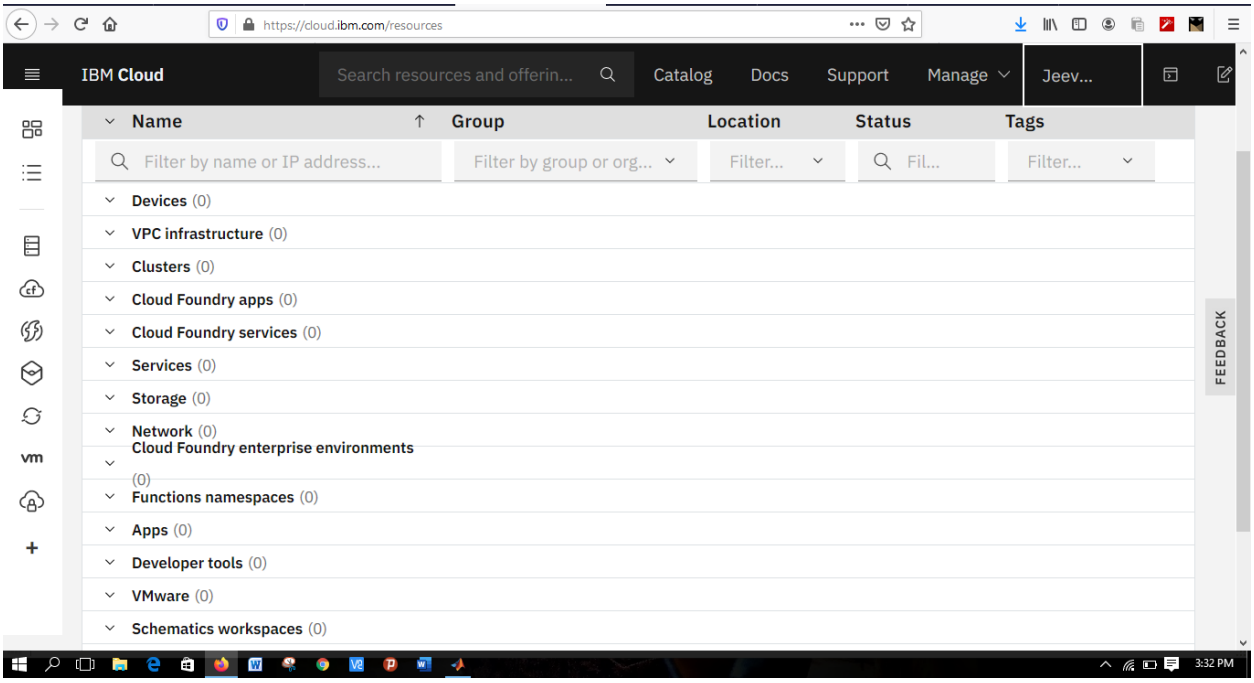
Explore IBM Cloud Platform

Milestone-1: Create IBM Cloud Account

IBM Academic Initiative Account :

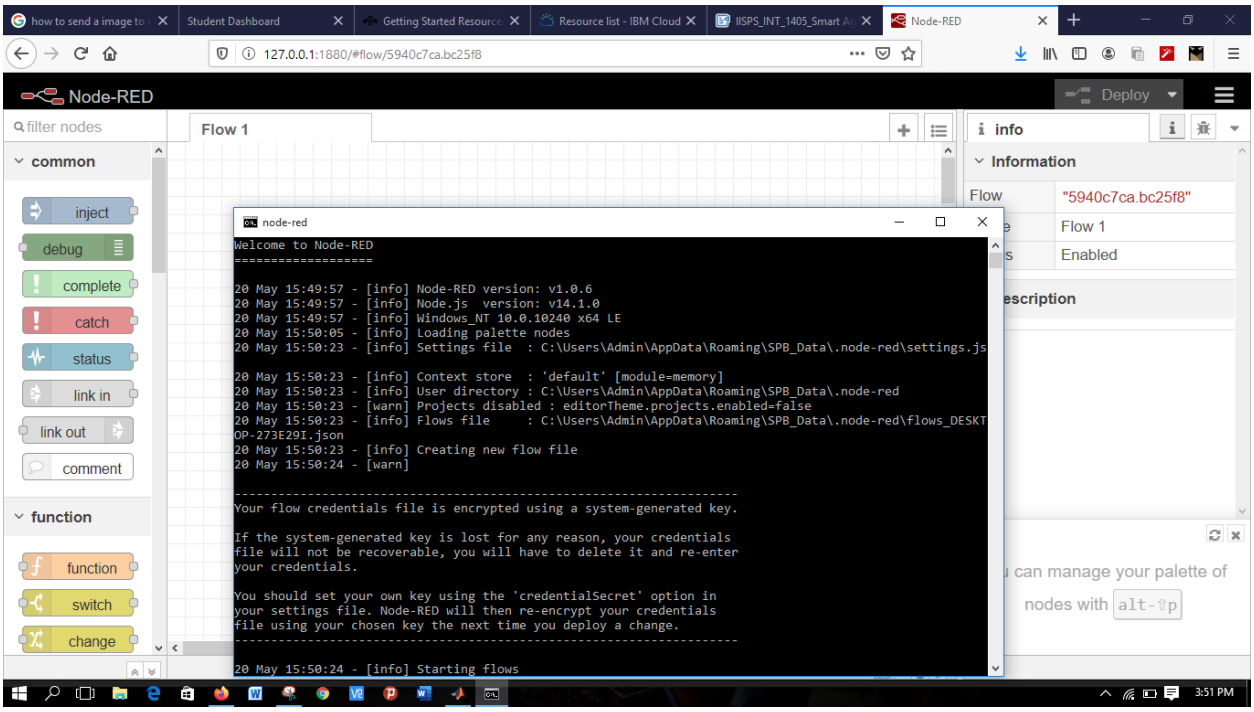


IBM cloud Account:

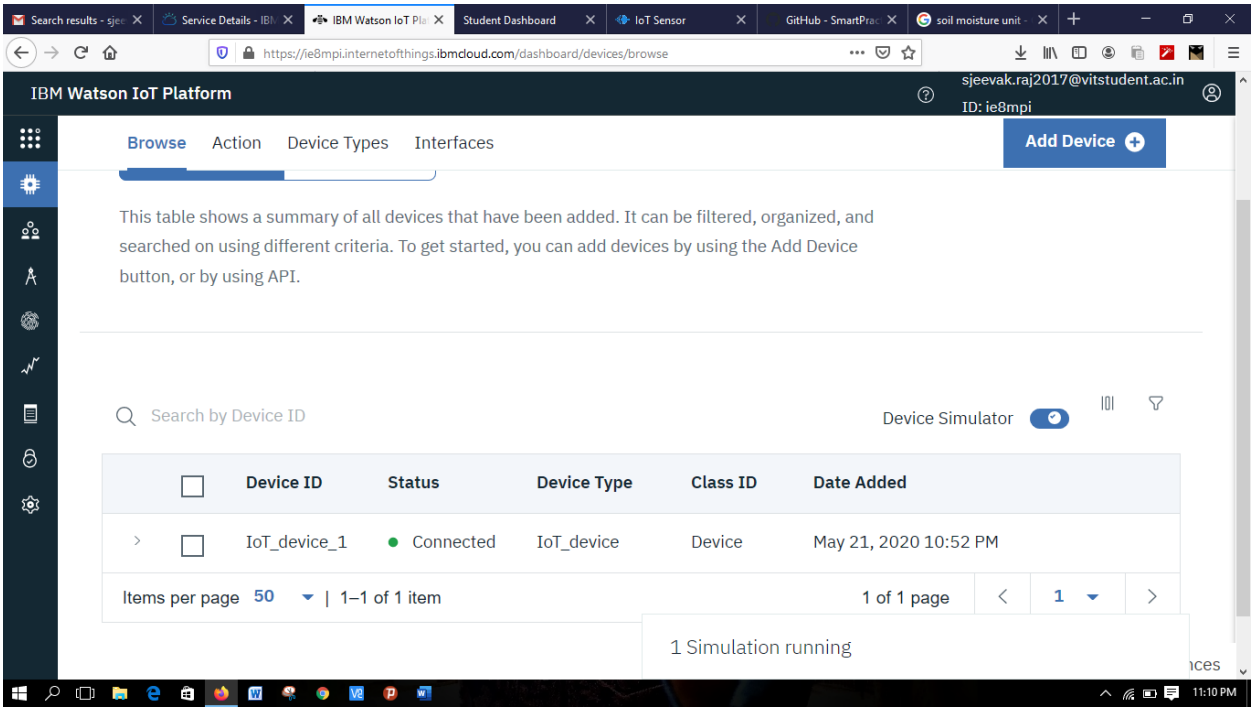


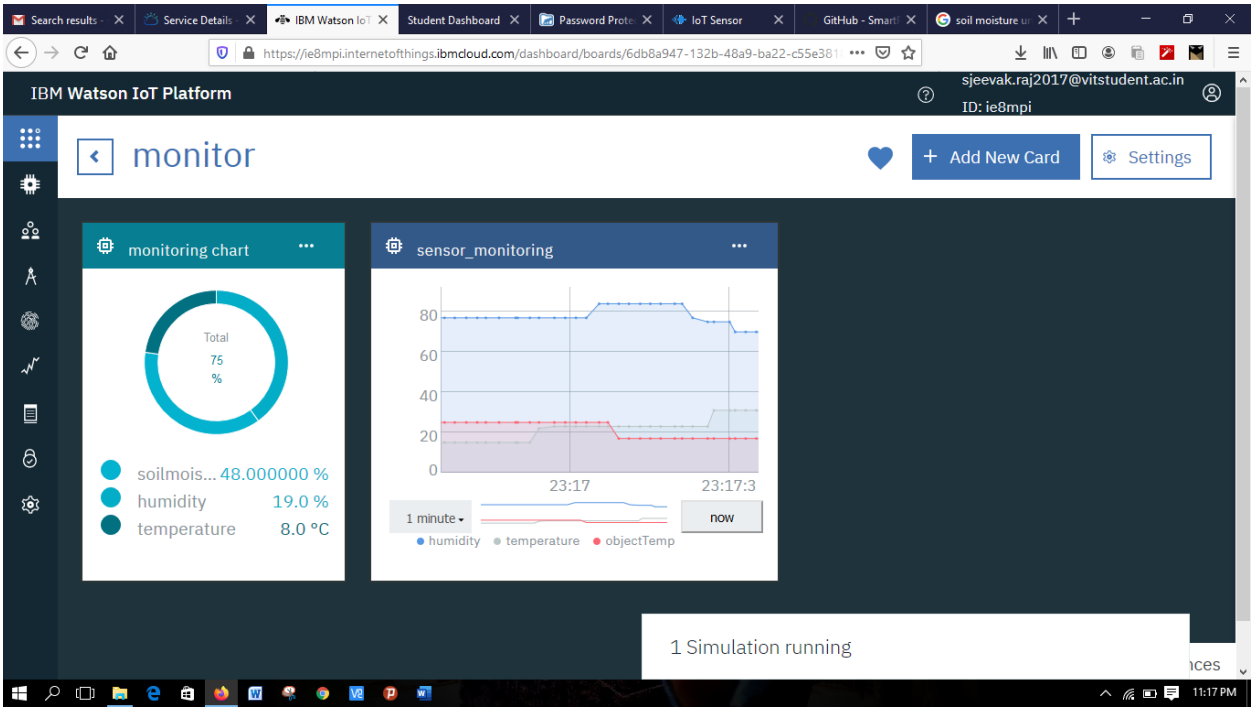
Milestone-2: Install Node-RED locally

Node-RED:

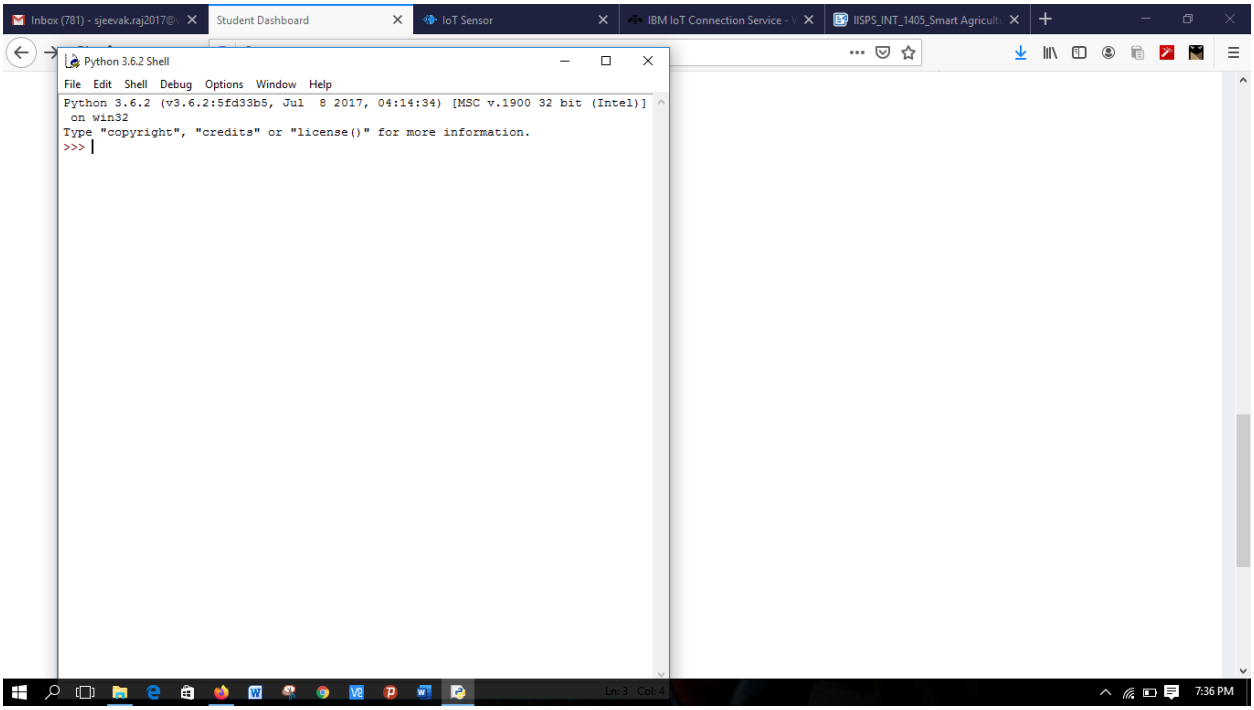


Milestone-3: IBM Watson IoT platform:





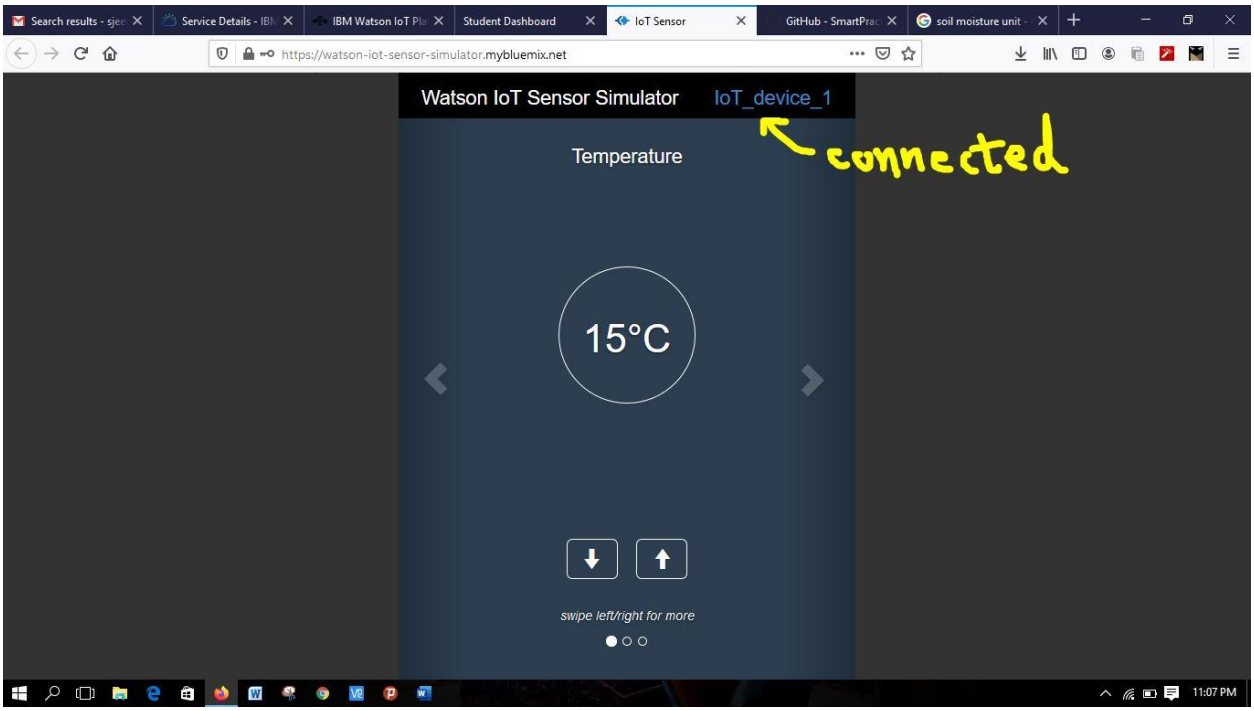
Milestone-4: Python IDE:



Task-3

Connect the IoT simulator to Watson IoT platform

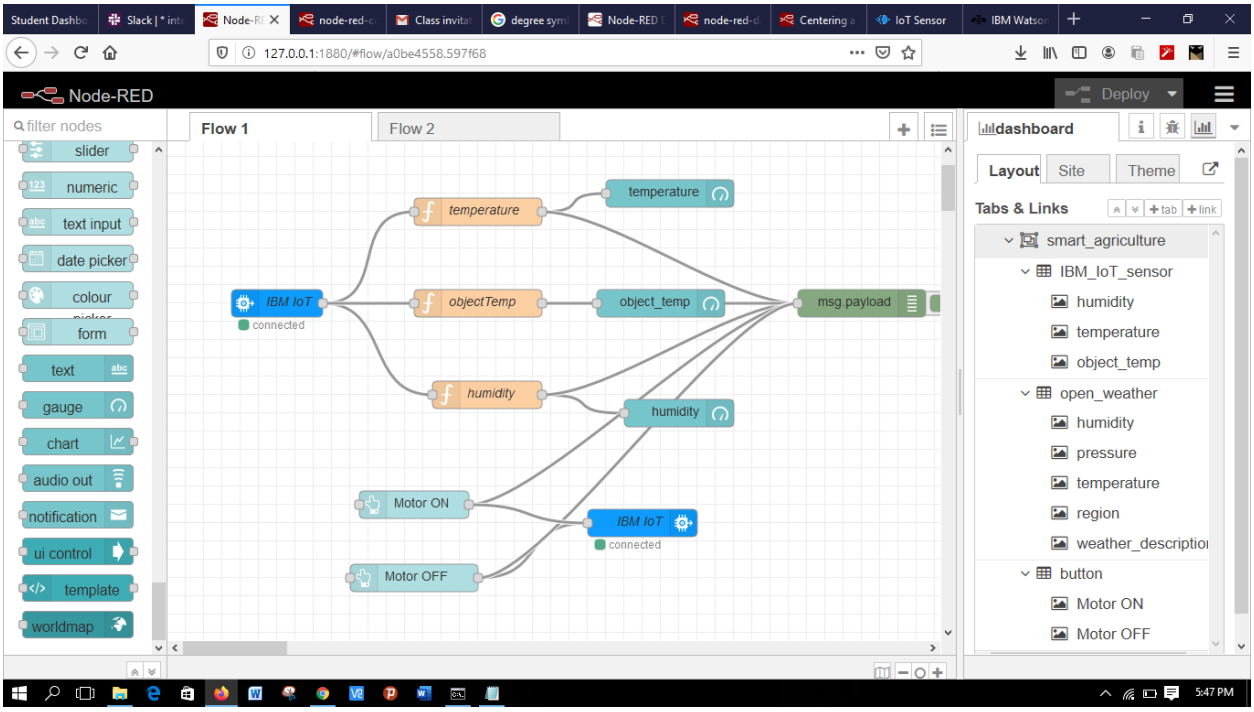
Milestone-1: screenshot of connection

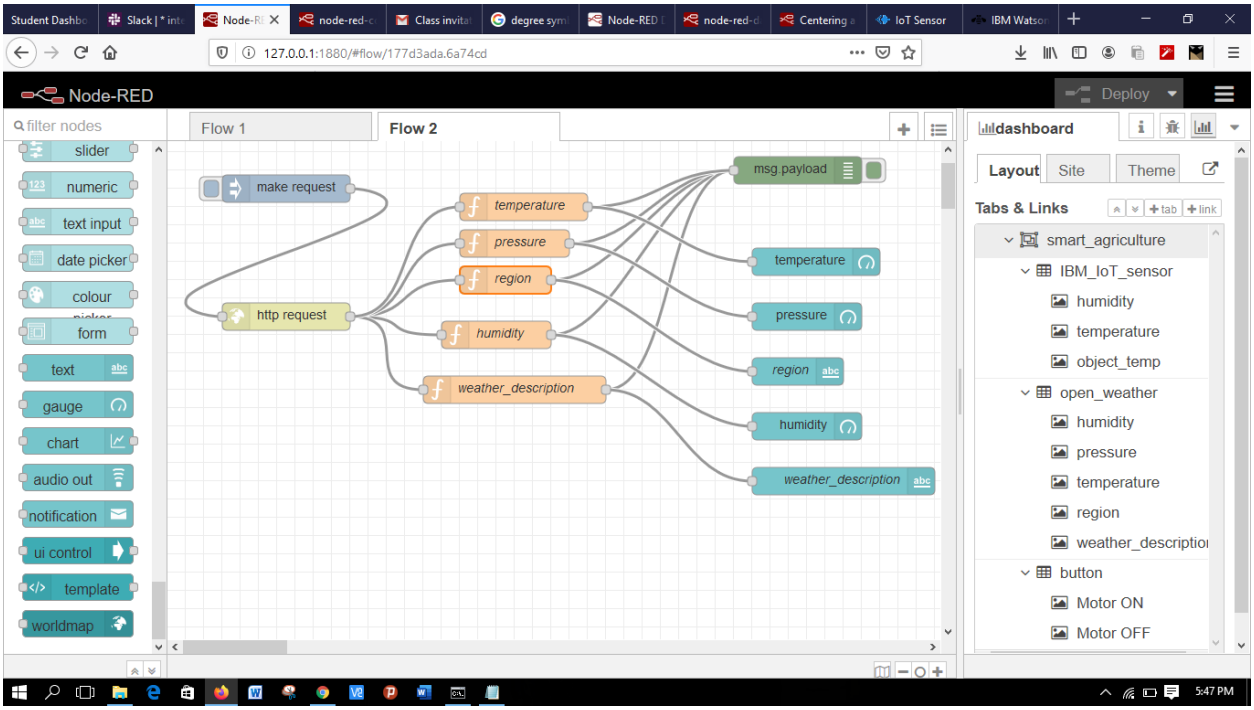


Task-4

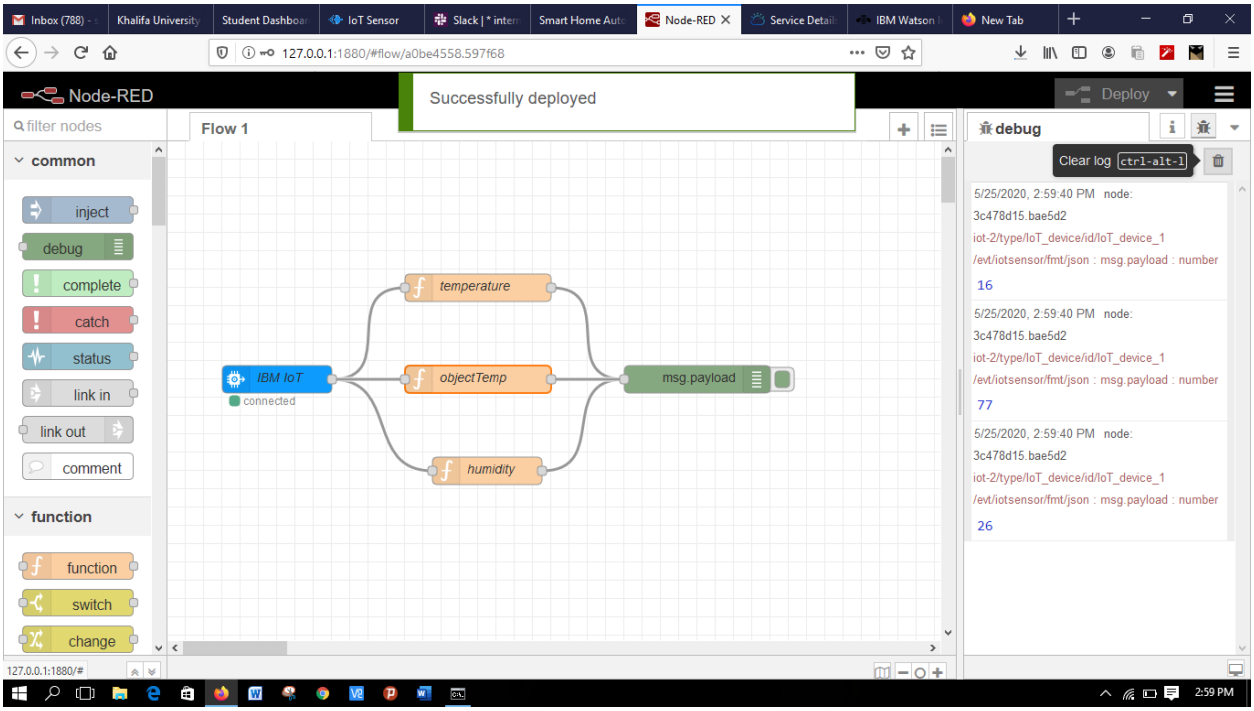
Configure the Nodered to get the Data from IBM IOT platform and Open Weather API

Milestone-1: Installing required nodes:



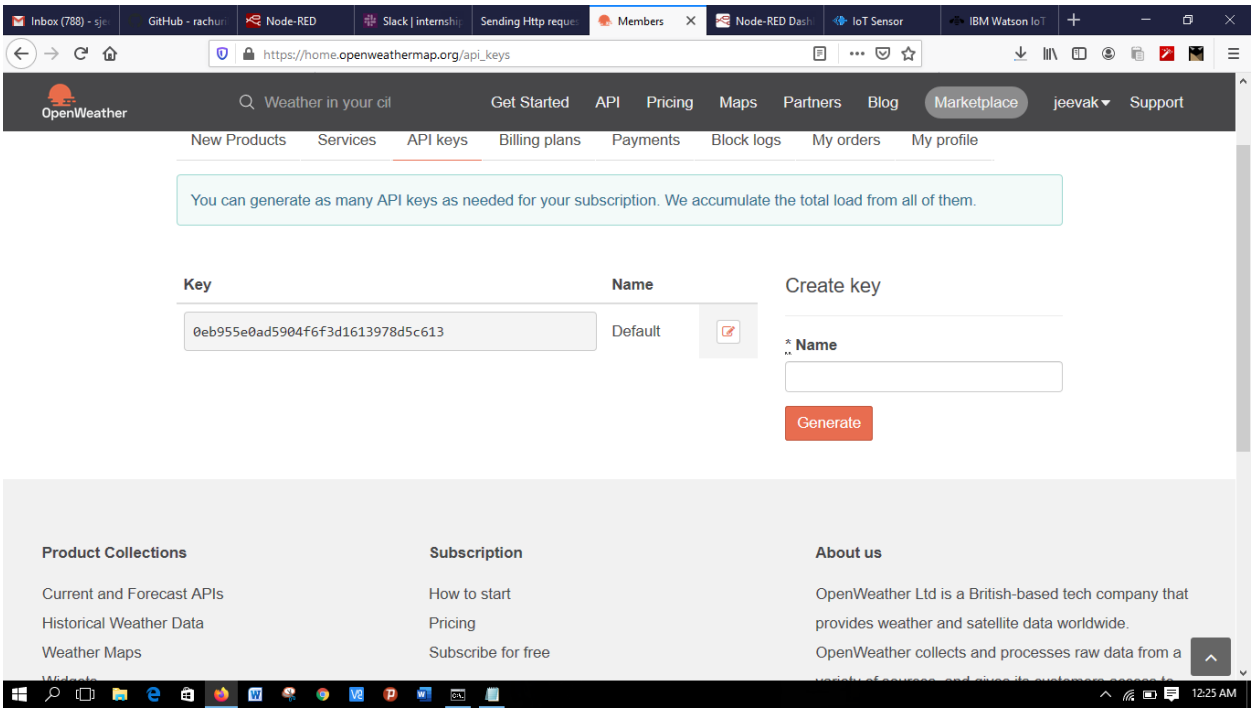


Milestone-2: Connect to your IBM IOT device to get the Simulator Data



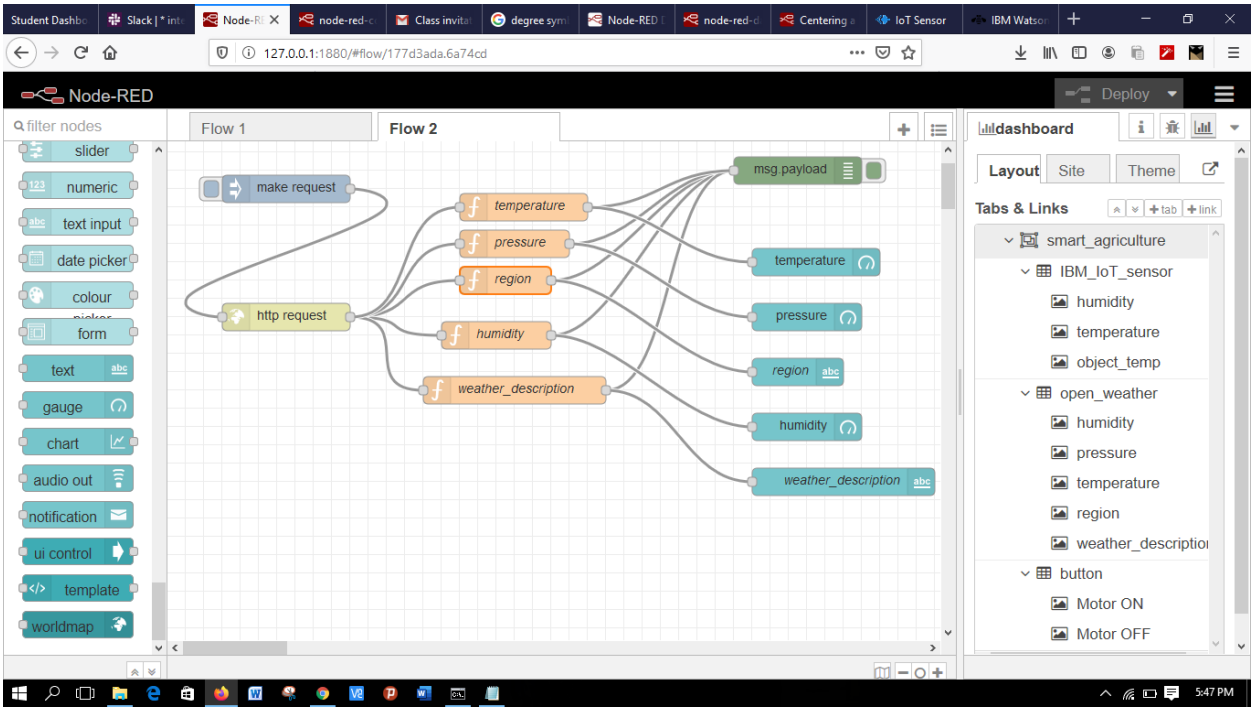
Milestone-3:

Create an account in Open Weather API and Configure your Open weather API Platform



Milestone-4:

Configure your nodered to get the weather forecasting data using http requests

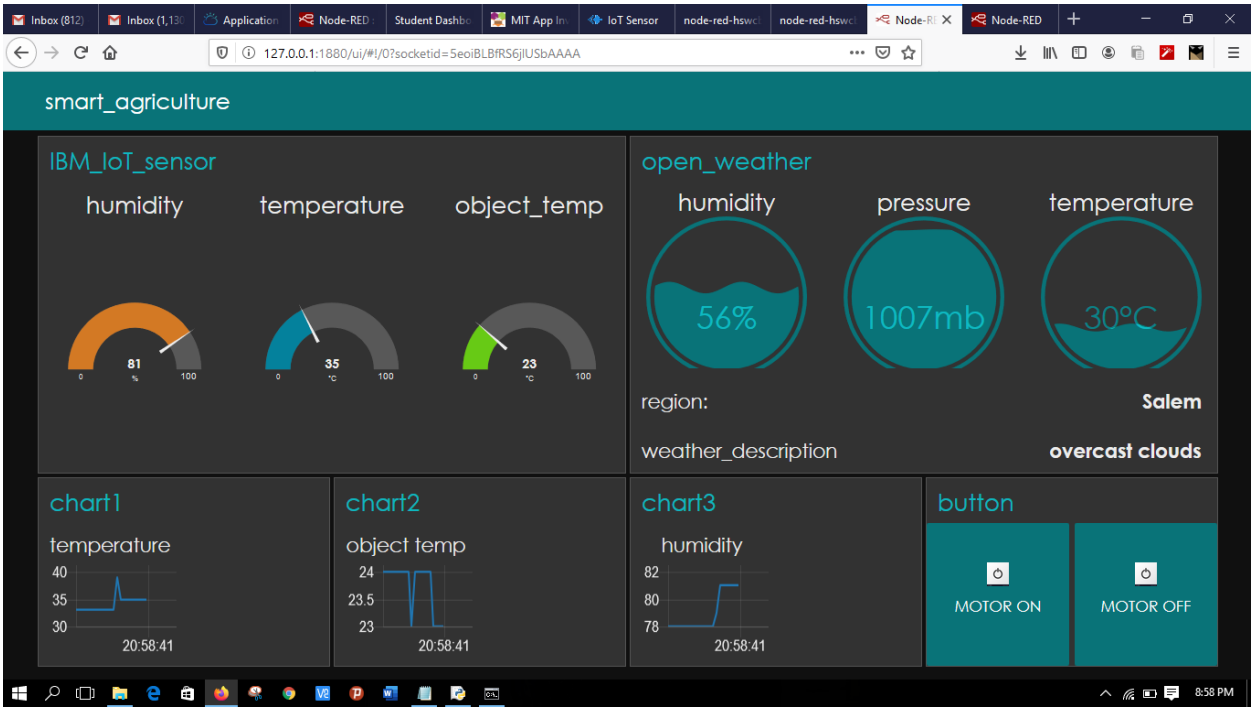


Task-5

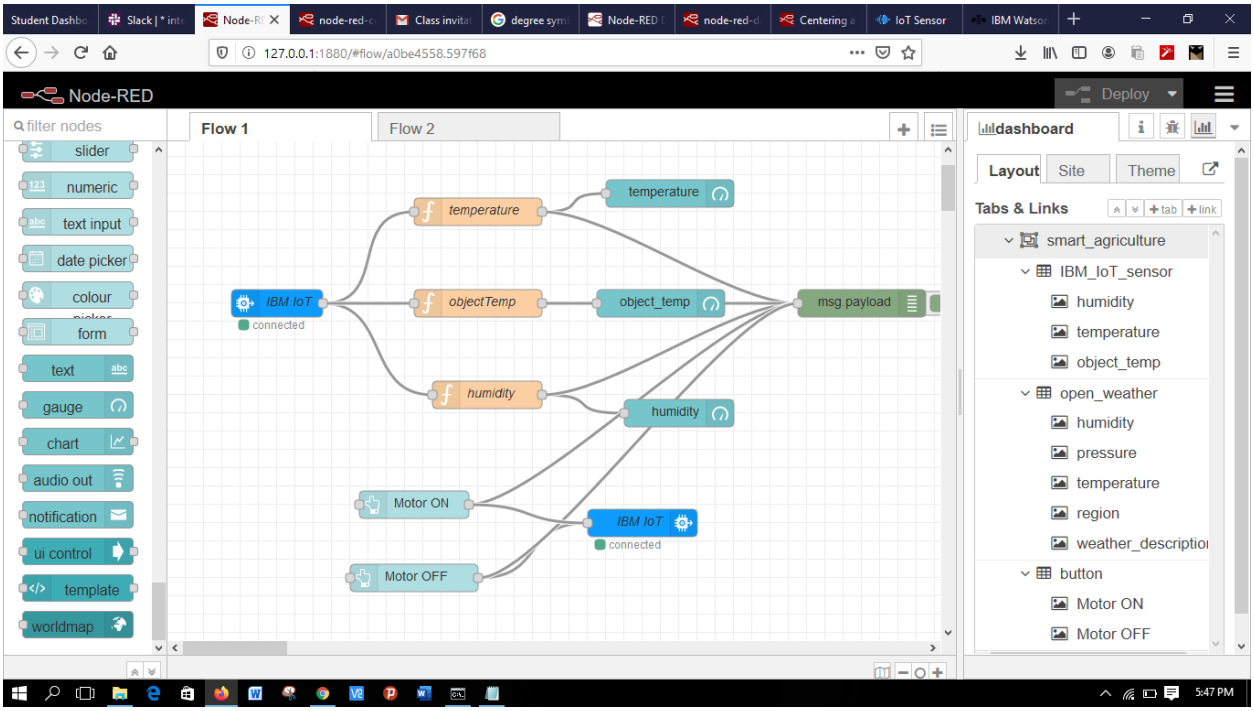
Building a Web App

Milestone-1:

To display in UI :



FLOW:


Node-RED
Deploy
Flow 1
Flow 2
filter nodes
slider
numeric
text input
date picker
colour
form
text
gauge
chart
audio out
notification
ui control
template
worldmap
temperature
IBM IoT
connected
objectTemp
object_temp
msg.payload
humidity
Motor ON
Motor OFF
dashboard
Layout
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Theme
Tabs & Links
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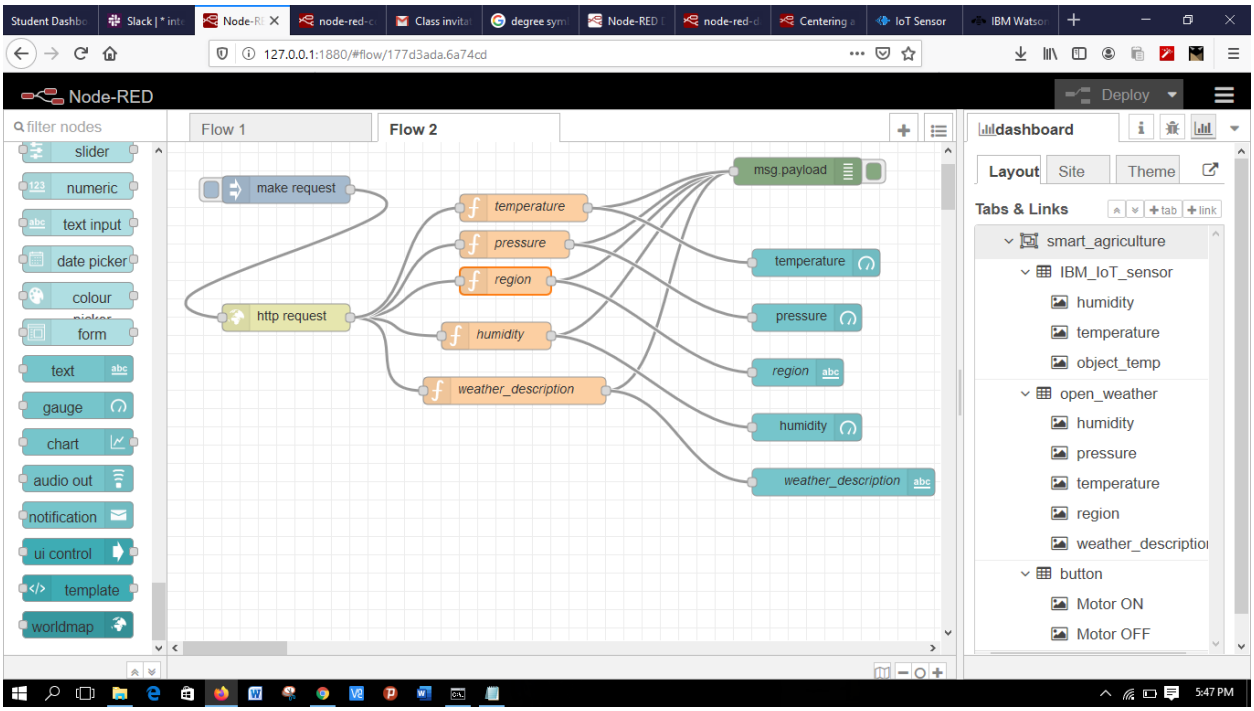
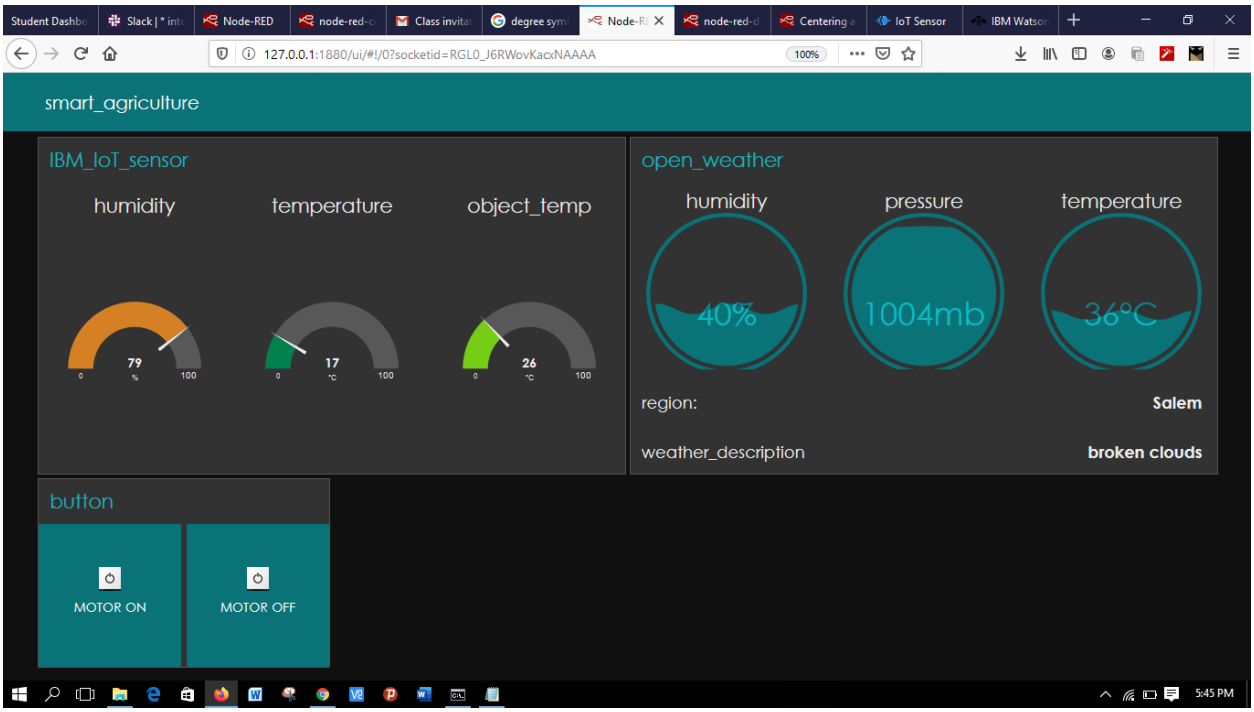
weather_descriptio
button
5:47 PM


Node-RED
Deploy
Flow 1
Flow 2
filter nodes
make request
http request
temperature
pressure
region
humidity
weather_description
msg.payload
dashboard
Layout
Site
Theme
Tabs & Links
smart_agriculture
IBM_IoT_sensor
open_weather
button
Motor ON
Motor OFF
5:47 PM

Milestone-2:

Configure the buttons:



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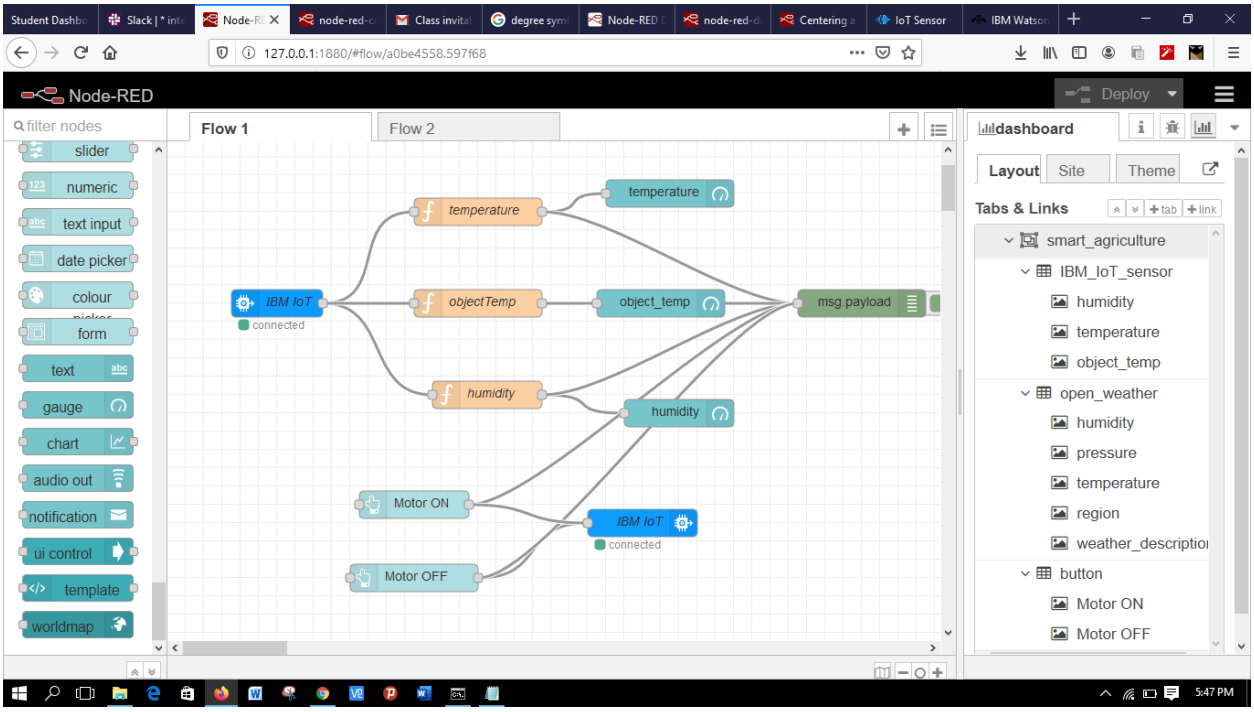
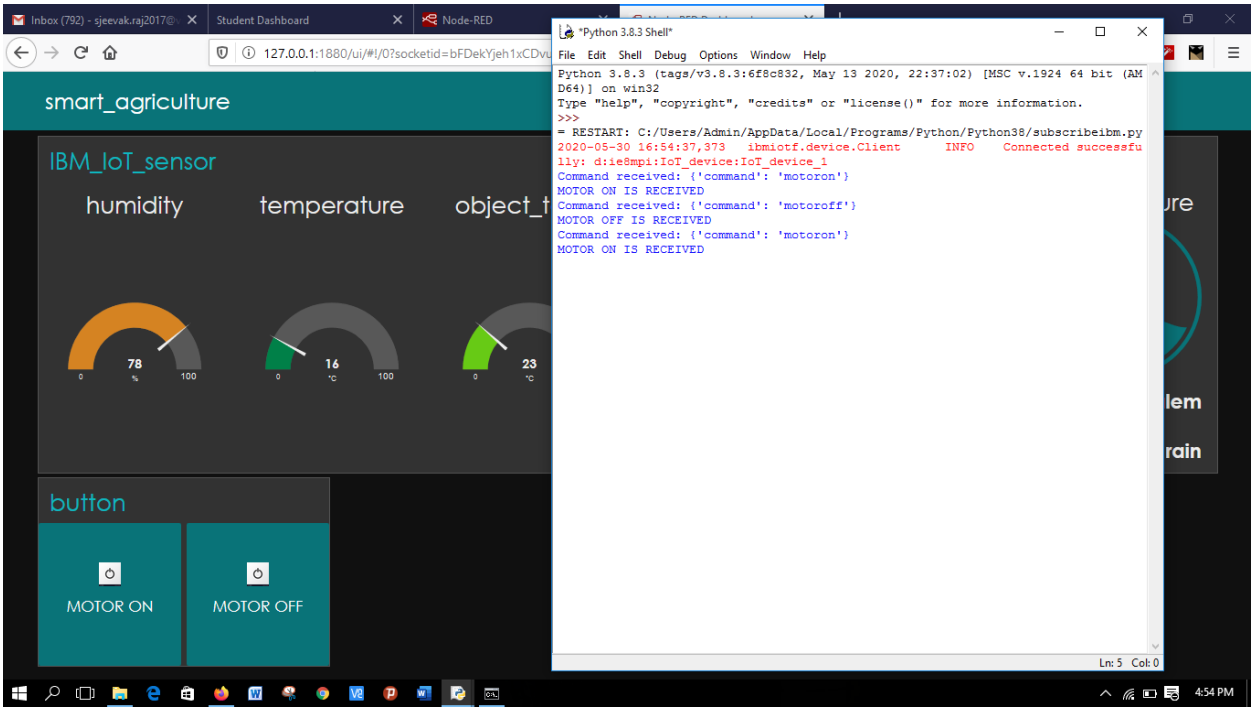
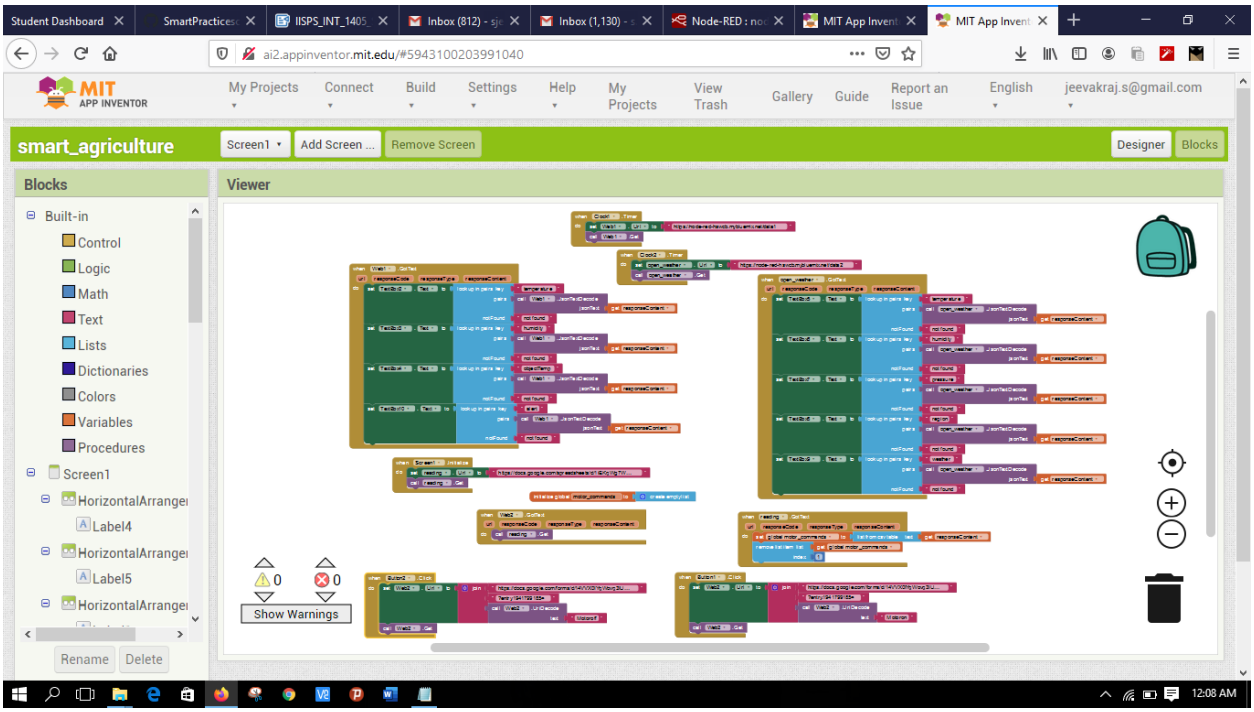


Motor ON/OFF in python:



MIT APP INVENTOR:



NODERED CLIPBOARD:

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FLOW-2:

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38","type":"ui_group","z":"","name":"OpenWeather","tab":"fcce226d.c8308","order":2,"disp":true,"width":"6","collapse":false},{"id":"fcce226d.c8308","type":"ui_tab","z":"","name":"smart_agriculture","icon":"dashboard","disabled":false,"hidden":false}]