Project Development phase

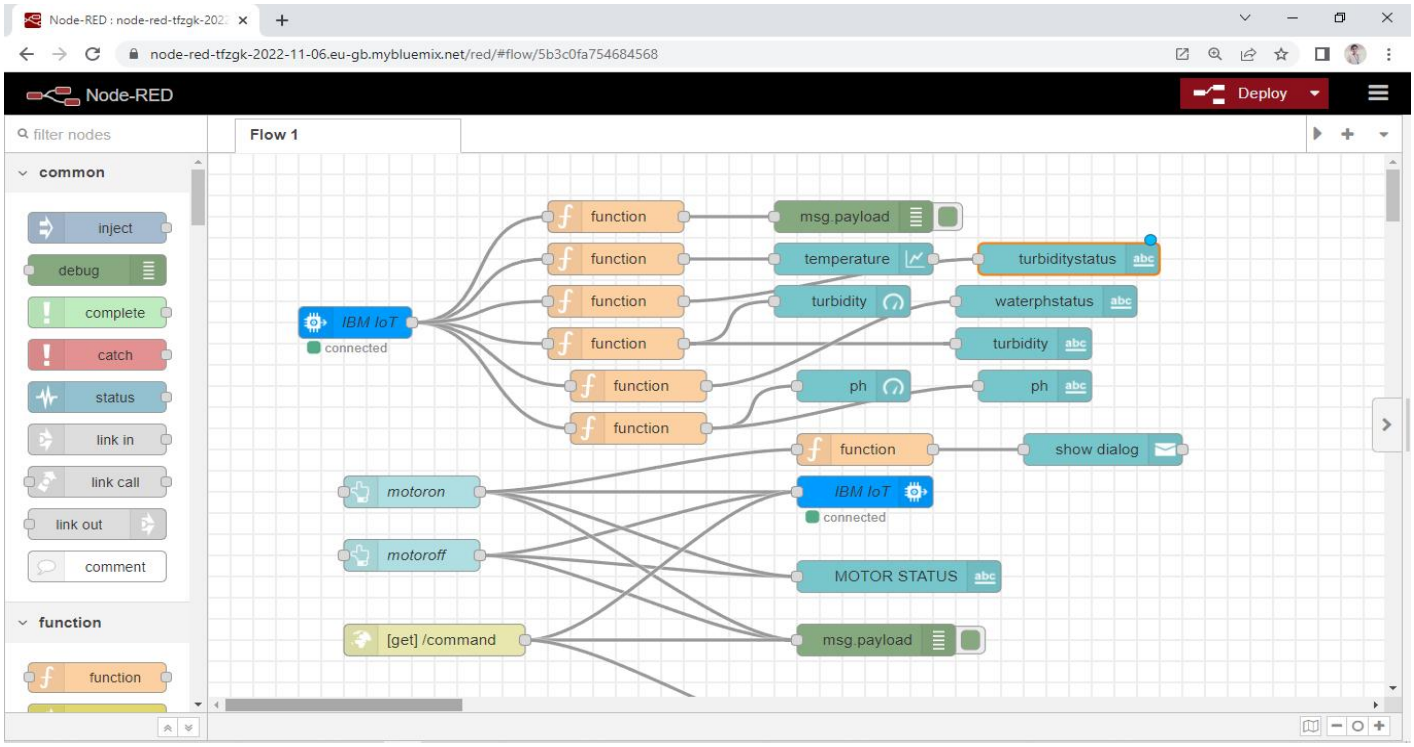
Date	**09 November 2022**
Team ID	**PNT2022TMID41301**
Project Name	**Project – RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM**
Maximum Marks	**4 Marks**

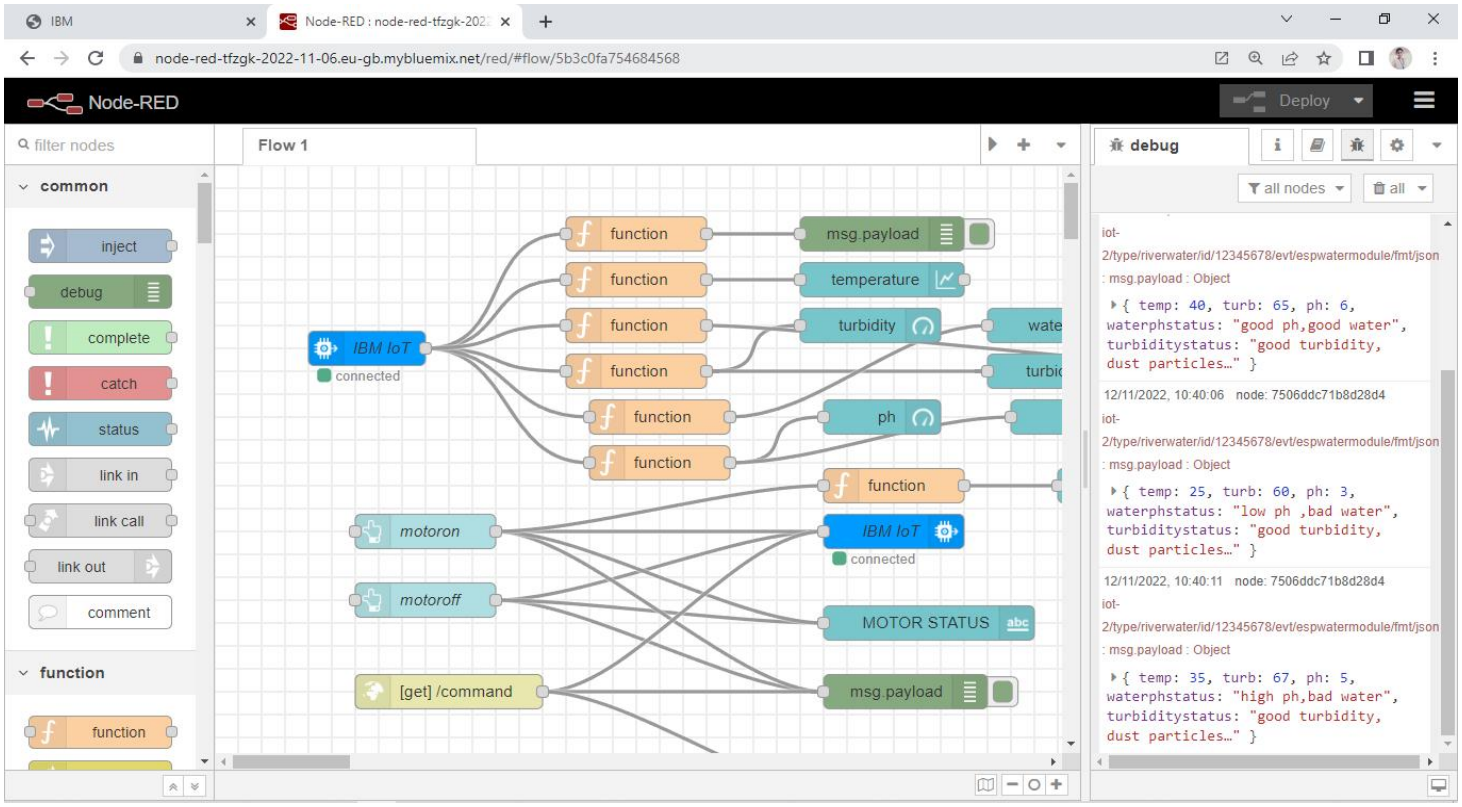
Delivering of Sprint-4

Python code test code:

```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random
#Provide your IBM Watson Device Credentials
organization = "55i2ca"
deviceType = "riverwater"
deviceId = "12345678"
authMethod = "token"
authToken = "23452345"


def myCommandCallback(cmd):
   print("Command received: %s" % cmd.data['command'])
   status=cmd.data['command']
   if status=="motoron":
      print ("motor is on")
      state="motor on"
   else :
      print ("motor is off")
      state="motor off"

try:
        deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method": authMethod, "auth-
token": authToken}
        deviceCli = ibmiotf.device.Client(deviceOptions)
        #.....................................................
except Exception as e:
        print("Caught exception connecting device: %s" % str(e))
        sys.exit()


print("checking status of watson iot device ... connected .....sucessfully")

deviceCli.connect()
print("dear user ... welcome to IBM-IOT ")

while True:
```

```
        waterph=random.randint(1,10)
        temperature=random.randint(20,50)#random temperature in water
        turbidity=random.randint(10,70)#random trubidity in water
        if (waterph<5):
                print("ph is low in water")
                waterphstatus="low ph ,bad water"
        elif(waterph>5)and(waterph<7):
                print("normal ph in water")
                waterphstatus="good ph,good water"
        else:
                print("normal ph in water")
                waterphstatus="high ph,bad water"
        if (turbidity<30):
                print("turbidity is low in water")
                turbiditystatus="low turbidity , dust particles is low"
        elif( turbidity>30)and(turbidity <70):
                print("normal turbidity in water")
                turbiditystatus="good turbidity, dust particles is medium "
        else:
                print("normal turbidity in water")
                turbiditystatus="high turbidity,dust particles is more "
        data = { 'temp' :
temperature,'turb':turbidity,'ph':waterph,'waterphstatus':waterphstatus,'turbiditystatus':turbiditystatus}
        #print data
        def myOnPublishCallback():
           print ("Published Temperature = %s C" % temperature,"turbidity = %s %%" % turbidity,"waterph = %s %%" %
waterph )
        success = deviceCli.publishEvent("espwatermodule", "json", data, qos=0, on_publish=myOnPublishCallback)
        if not success:
           print("Not connected to IoTF")
        time.sleep(5)
        deviceCli.commandCallback = myCommandCallback


# Disconnect the device and application from the cloud
deviceCli.disconnect()
```


Node-RED : node-red-tfzgk-202
node-red-tfzgk-2022-11-06.eu-gb.mybluemix.net/red/#flow/5b3c0fa754684568
Node-RED
Deploy
filter nodes
Flow 1
common
inject
debug
complete
catch
status
link in
link call
link out
comment
function
function
function
function
function
function
function
function
function
msg.payload
temperature
turbidity
ph
turbiditystatus
waterphstatus
turbidity
ph
show dialog
IBM IoT
connected
motoron
motoroff
[get] /command
IBM IoT
connected
MOTOR STATUS
msg.payload


IBM
Node-RED : node-red-tfzgk-202
node-red-tfzgk-2022-11-06.eu-gb.mybluemix.net/red/#flow/5b3c0fa754684568
Node-RED
Deploy
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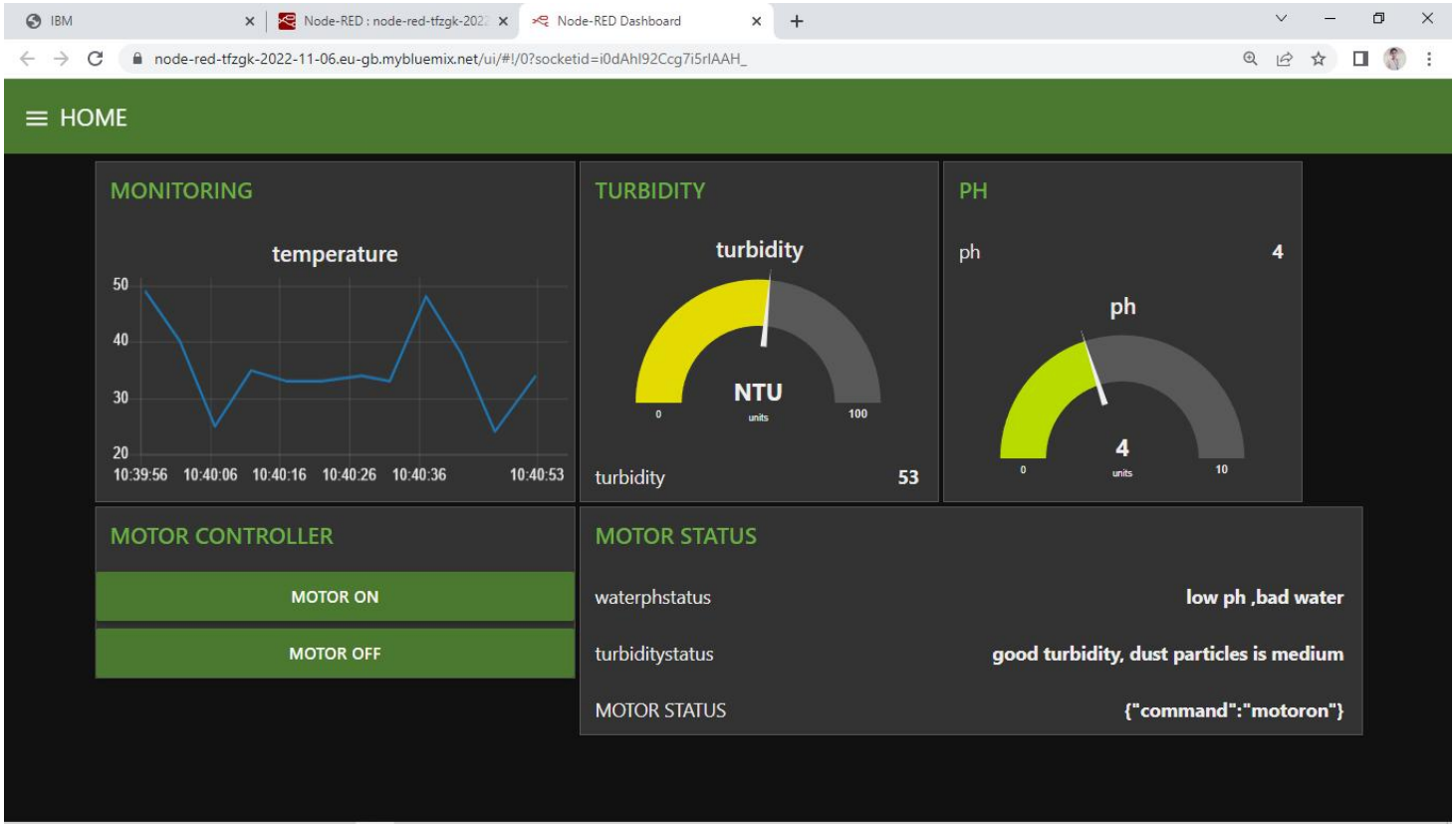
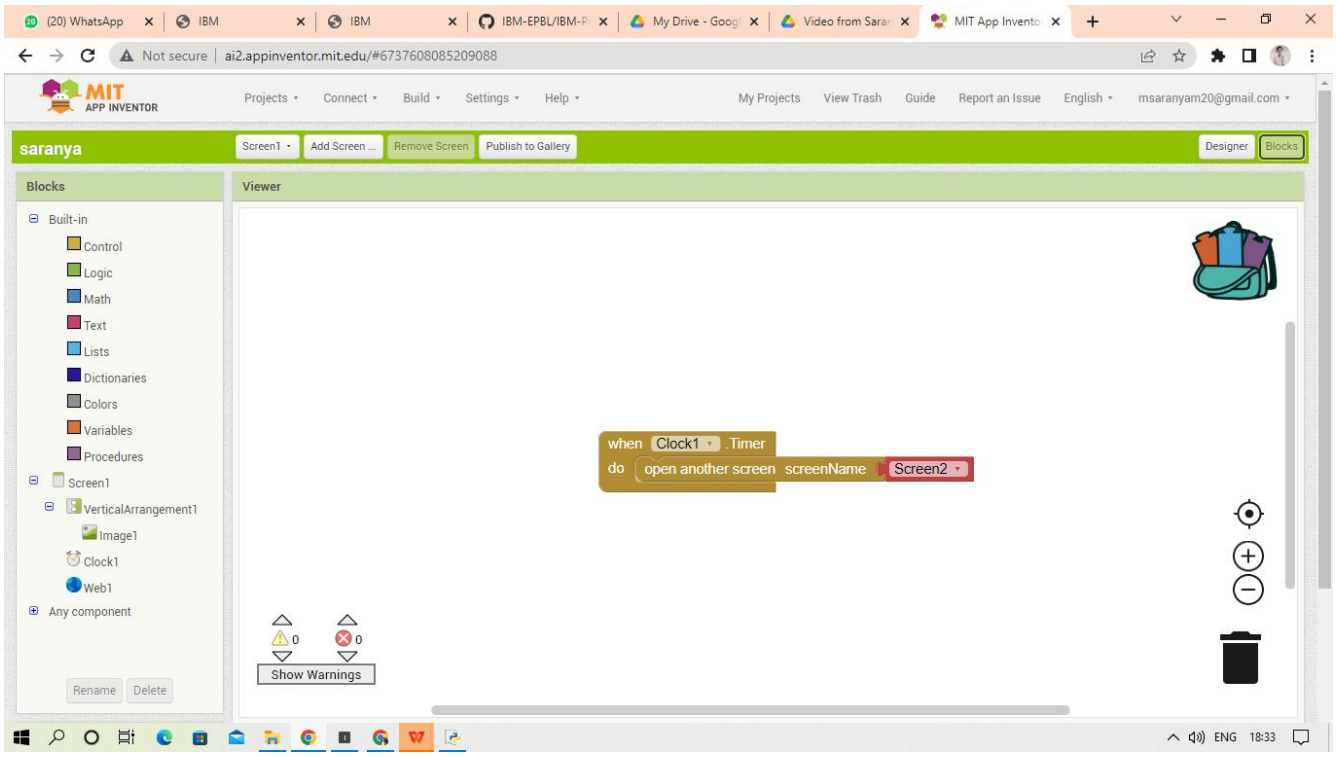
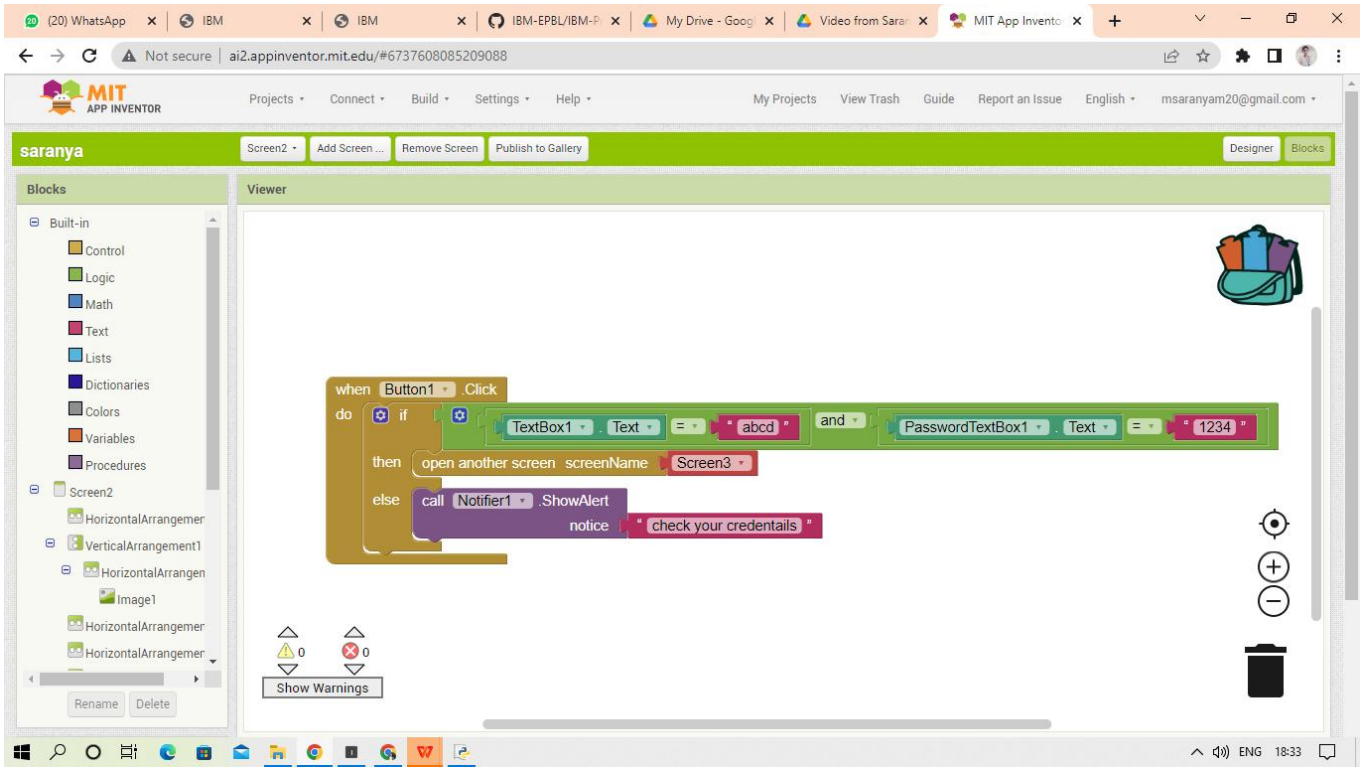
function
function
function
function
function
function
function
function
function
msg.payload
temperature
turbidity
ph
IBM IoT
connected
motoron
motoroff
[get] /command
IBM IoT
connected
MOTOR STATUS
msg.payload
debug
all nodes
all
iot-2/type/riverwater/id/12345678/evt/espwatermodule/fmt/json : msg.payload : Object
{ temp: 40, turb: 65, ph: 6, waterphstatus: "good ph,good water", turbiditystatus: "good turbidity, dust particles…" }
12/11/2022, 10:40:06 node: 7506ddc71b8d28d4
iot-2/type/riverwater/id/12345678/evt/espwatermodule/fmt/json : msg.payload : Object
{ temp: 25, turb: 60, ph: 3, waterphstatus: "low ph ,bad water", turbiditystatus: "good turbidity, dust particles…" }
12/11/2022, 10:40:11 node: 7506ddc71b8d28d4
iot-2/type/riverwater/id/12345678/evt/espwatermodule/fmt/json : msg.payload : Object
{ temp: 35, turb: 67, ph: 5, waterphstatus: "high ph,bad water", turbiditystatus: "good turbidity, dust particles…" }

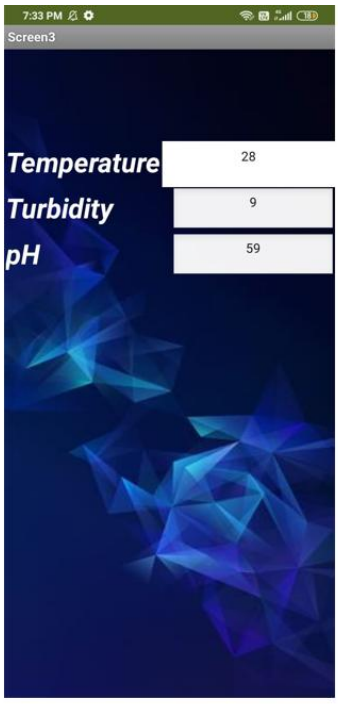

IBM
Node-RED : node-red-tfzgk-202
Node-RED Dashboard
node-red-tfzgk-2022-11-06.eu-gb.mybluemix.net/ui/#!/0?socketid=i0dAhI92Ccg7i5rIAAH_
HOME
MONITORING
temperature
50
40
30
20
10:39:56
10:40:06
10:40:16
10:40:26
10:40:36
10:40:53
TURBIDITY
turbidity
NTU
units
0
100
turbidity
53
PH
ph
4
ph
4
units
0
10
MOTOR CONTROLLER
MOTOR ON
MOTOR OFF
MOTOR STATUS
waterphstatus
low ph ,bad water
turbiditystatus
good turbidity, dust particles is medium
MOTOR STATUS
{"command":"motoron"}

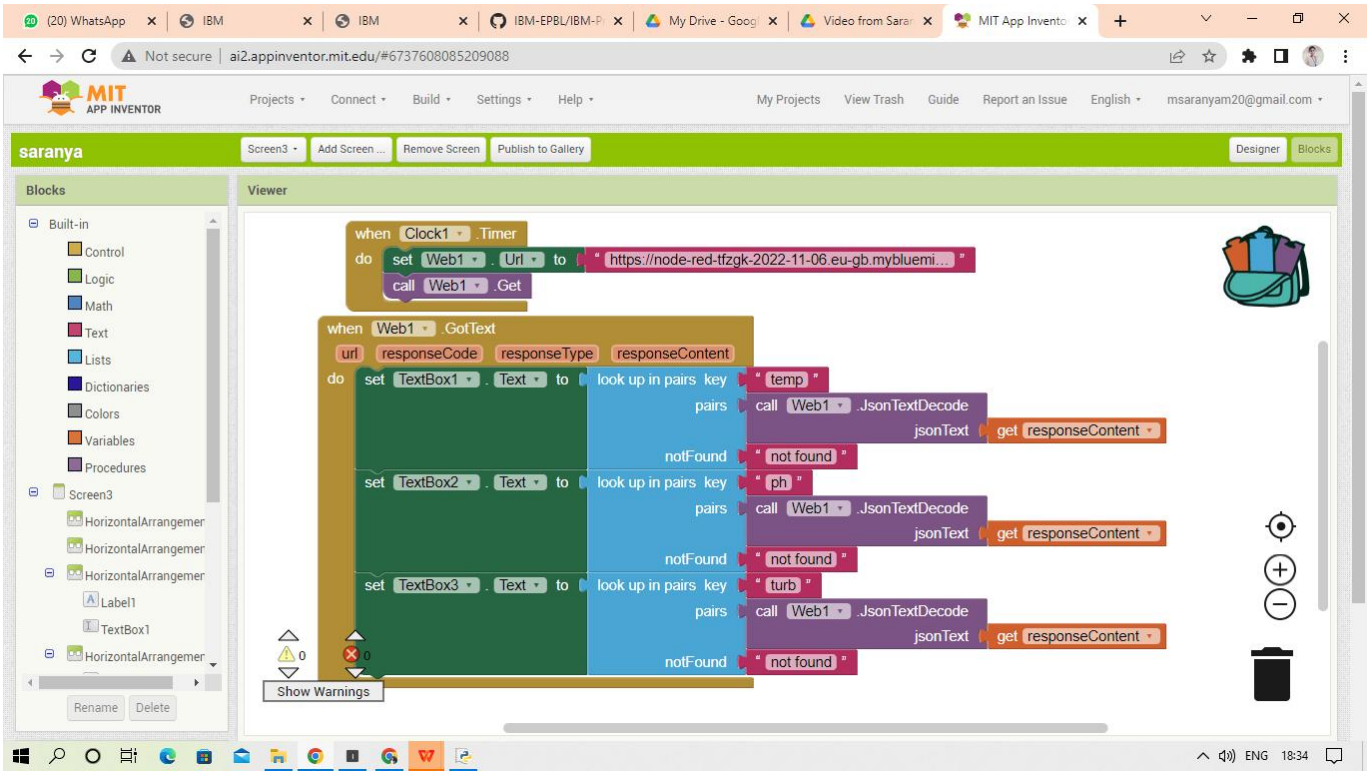
MIT APP INVERTOR OUTPUT




7:33 PM
Screen2
user name:
abcd
password:
submit


MIT App Inventor
Not secure | ai2.appinventor.mit.edu/#6737608085209088
Projects
Connect
Build
Settings
Help
My Projects
View Trash
Guide
Report an Issue
English
msaranyam20@gmail.com
saranya
Screen2
Add Screen ...
Remove Screen
Publish to Gallery
Designer
Blocks
Blocks
Viewer
Built-in
Control
Logic
Math
Text
Lists
Dictionaries
Colors
Variables
Procedures
Screen2
Rename
Delete
when Button1 .Click
do if TextBox1 . Text = " abcd " and PasswordTextBox1 . Text = " 1234 "
then open another screen screenName Screen3
else call Notifier1 .ShowAlert
notice " check your credentails "
Show Warnings
ENG 18:33


7:33 PM
Screen3
Temperature
28
Turbidity
9
pH
59


MIT APP INVENTOR
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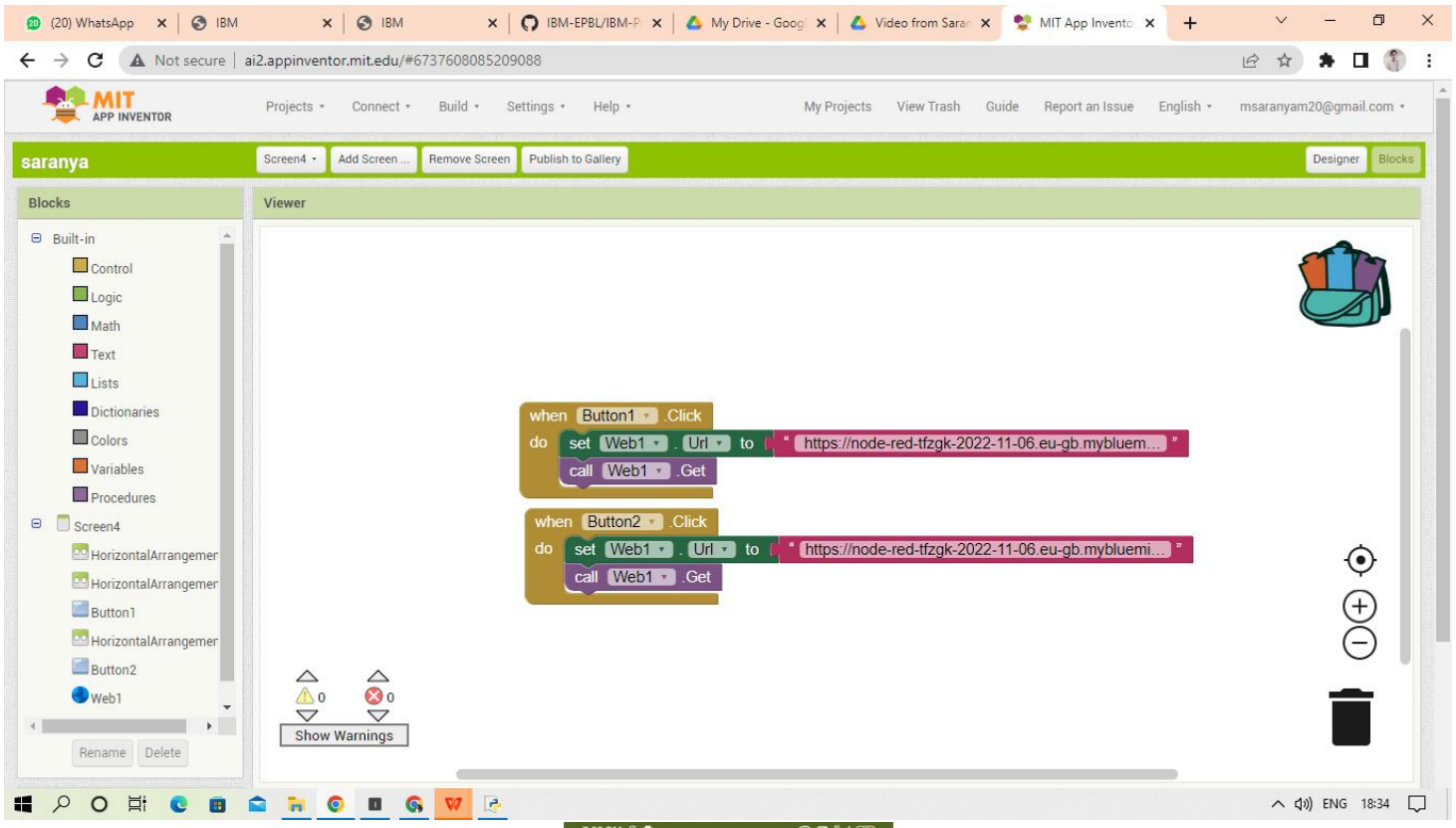
msaranyam20@gmail.com
saranya
Screen3
Add Screen ...
Remove Screen
Publish to Gallery
Designer
Blocks
Blocks
Viewer
Built-in
Control
Logic
Math
Text
Lists
Dictionaries
Colors
Variables
Procedures
Screen3
HorizontalArrangemer
HorizontalArrangemer
HorizontalArrangemer
Label1
TextBox1
HorizontalArrangemer
Rename
Delete
when Clock1 .Timer
do set Web1 . Url to " https://node-red-tfzgk-2022-11-06.eu-gb.mybluemi... "
call Web1 .Get
when Web1 .GotText
url responseCode responseType responseContent
do set TextBox1 . Text to look up in pairs key " temp "
pairs call Web1 .JsonTextDecode
jsonText get responseContent
notFound " not found "
set TextBox2 . Text to look up in pairs key " ph "
pairs call Web1 .JsonTextDecode
jsonText get responseContent
notFound " not found "
set TextBox3 . Text to look up in pairs key " turb "
pairs call Web1 .JsonTextDecode
jsonText get responseContent
notFound " not found "
Show Warnings
ENG
18:34


(20) WhatsApp
IBM
IBM
IBM-EPBL/IBM-P
My Drive - Goog
Video from Sara
MIT App Invento
Not secure
ai2.appinventor.mit.edu/#6737608085209088
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Projects
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Screen4
Add Screen ...
Remove Screen
Publish to Gallery
Designer
Blocks
Blocks
Built-in
Control
Logic
Math
Text
Lists
Dictionaries
Colors
Variables
Procedures
Screen4
HorizontalArrangemer
HorizontalArrangemer
Button1
HorizontalArrangemer
Button2
Web1
Rename
Delete
Viewer
when Button1 .Click
do set Web1 . Url to " https://node-red-tfzgk-2022-11-06.eu-gb.mybluem... "
call Web1 .Get
when Button2 .Click
do set Web1 . Url to " https://node-red-tfzgk-2022-11-06.eu-gb.mybluemi... "
call Web1 .Get
0
0
Show Warnings
ENG
18:34


7:33 PM
Screen4
MOTOR ON
MOTOR OFF