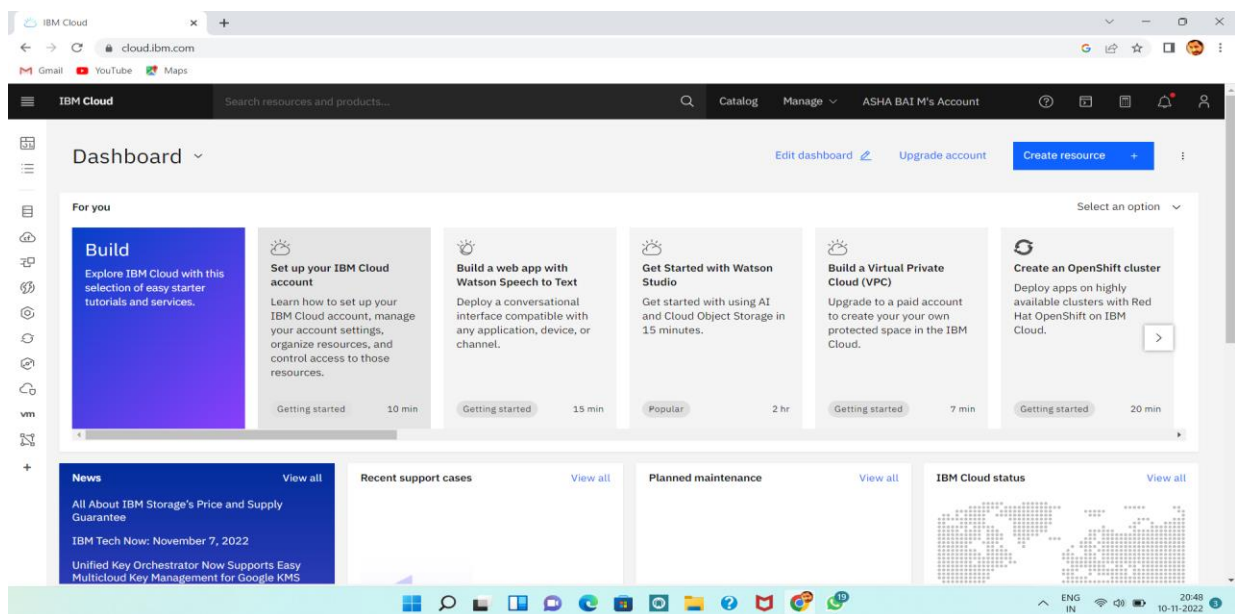# REAL TIME RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM
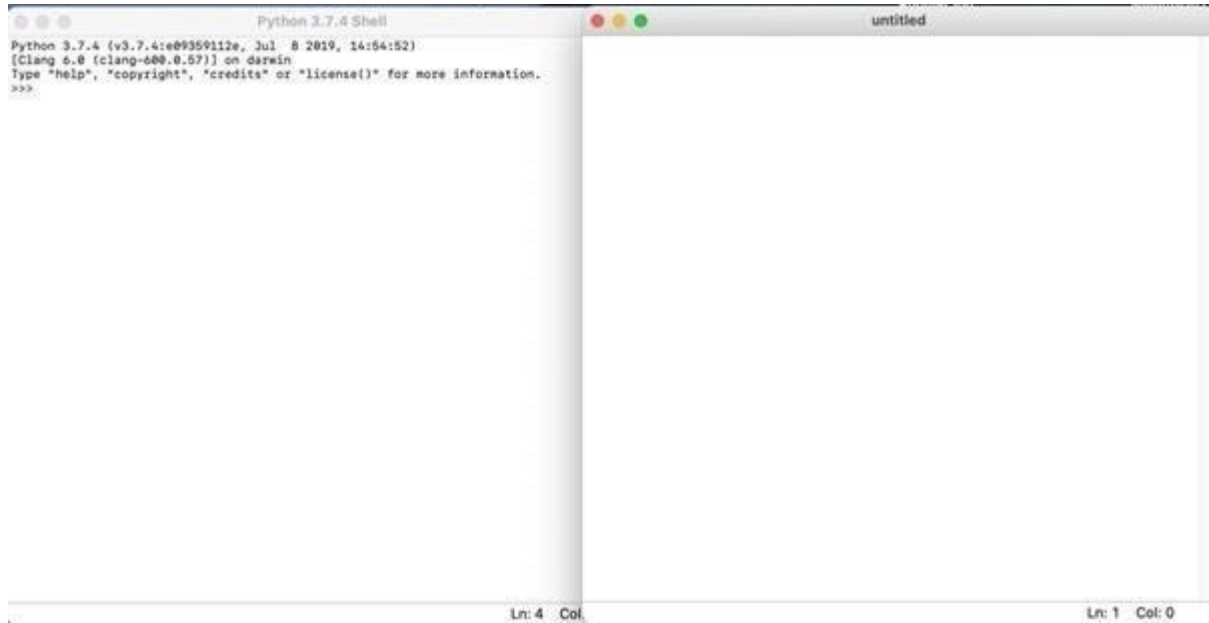
TEAM ID	PNT2022TMID23839
PROJECT NAME	REAL TIME RIVER WATER QUALITY MONITORING AND CONTROL SYSTEM
LEADER NAME	ASHA BAI M
TEAM MEMBERS NAME	GEETHASREE S KEERTHIGA P GOWRI S R

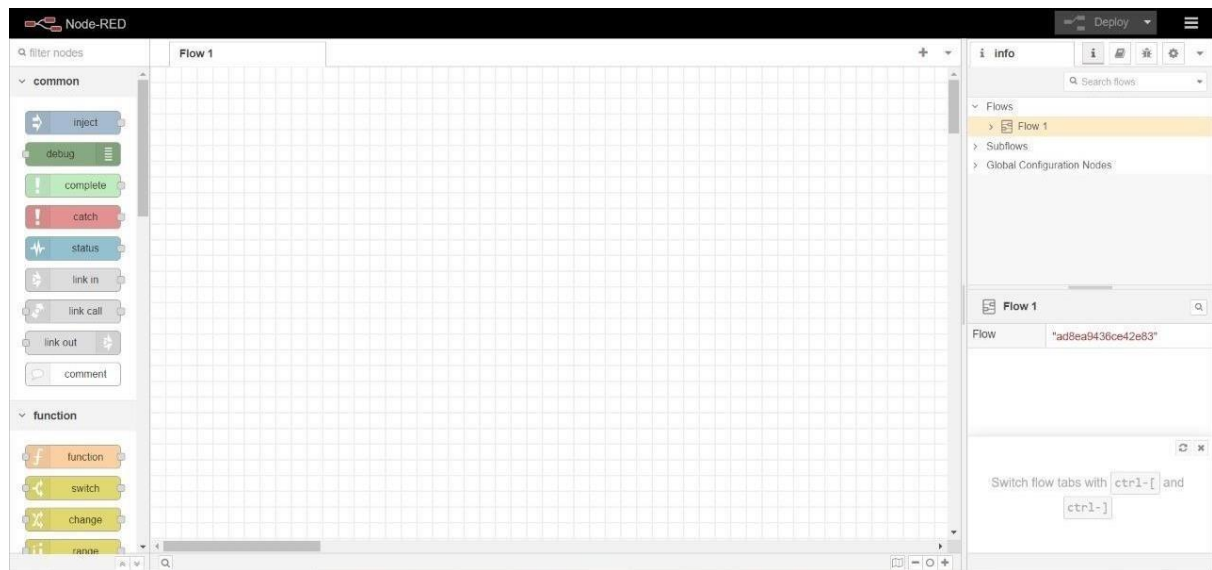**PREREQUISITES:**

<u>IBM CLOUD SERVICES</u>

SOFTWARE

CREATE AN CONFIGURE IBM CLOUD SERVIVES:
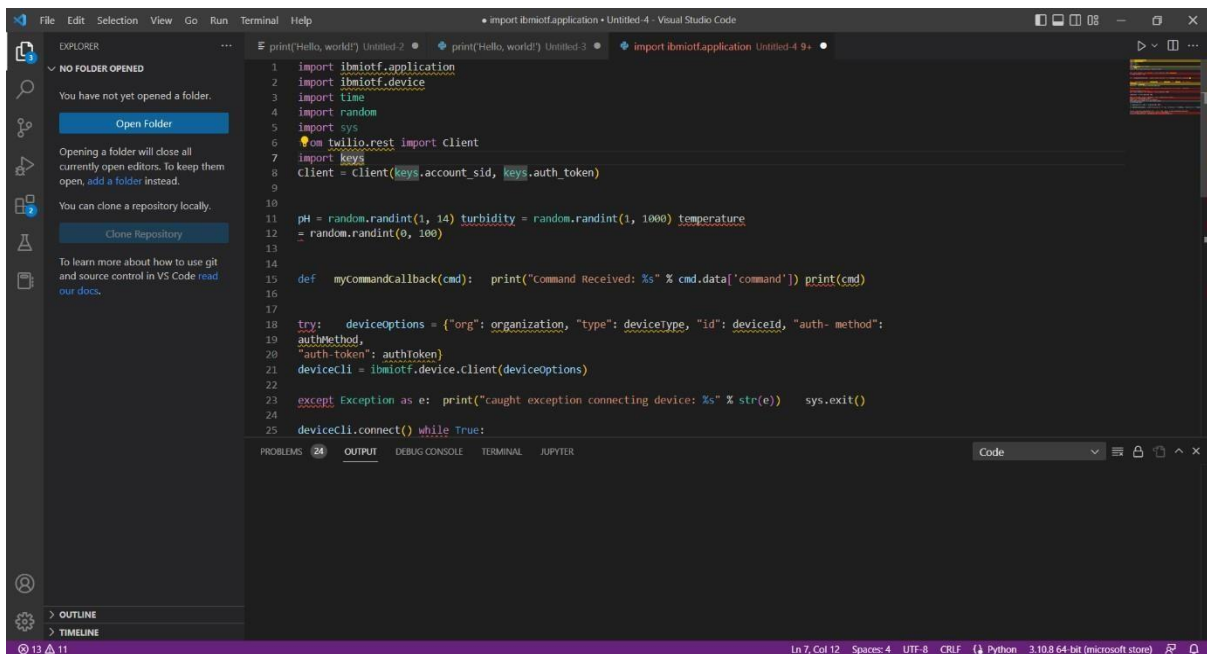
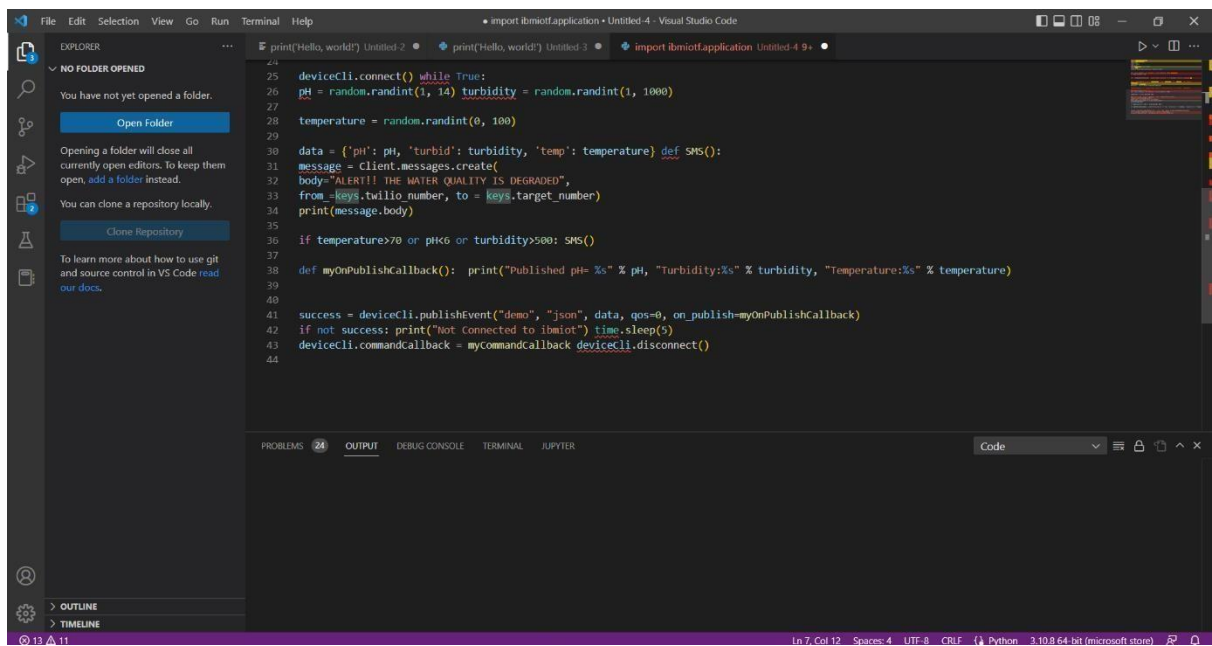CREATE IBM WATSON IOT PLATFORM AND DEVICE
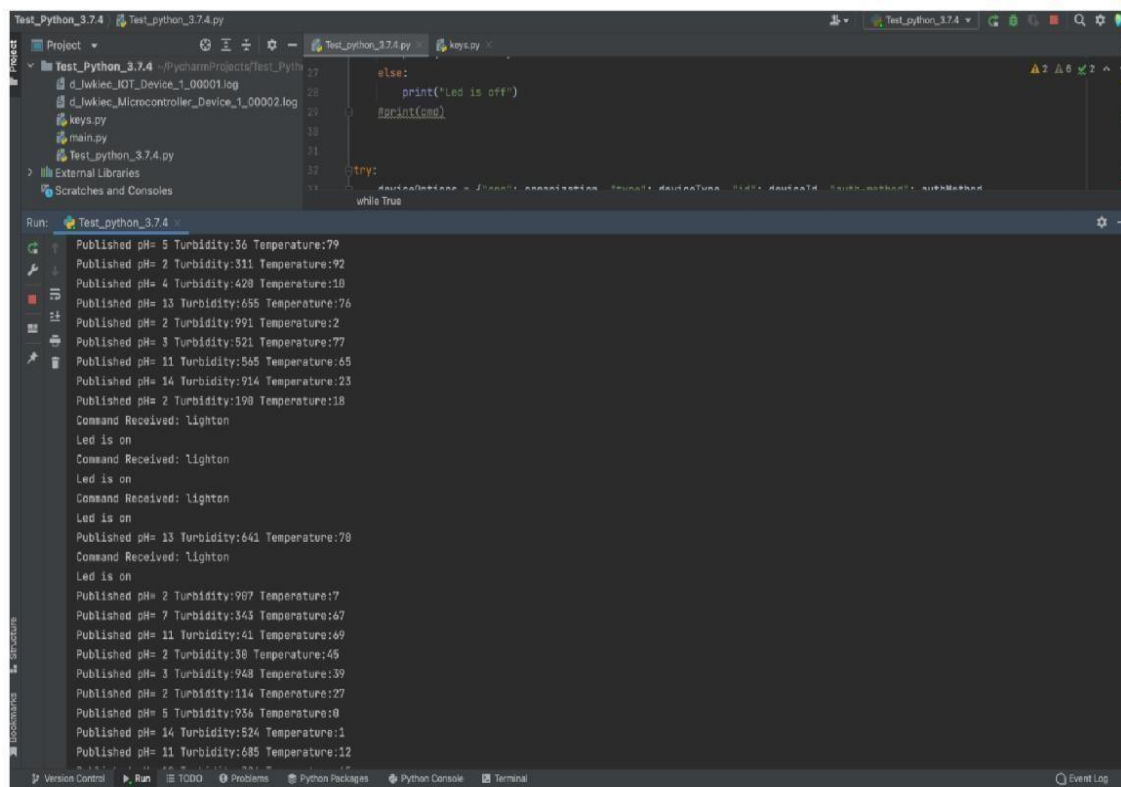
CREATE NODE-RED SERVICE

DEVELOP THE PYTHON SCRIPT

DEVELOP A PYTHON SCRIPT

CODING

```
25  deviceCli.connect() while True:
26  pH = random.randint(1, 14) turbidity = random.randint(1, 1000)
27
28  temperature = random.randint(0, 100)
29
30  data = {'pH': pH, 'turbid': turbidity, 'temp': temperature} def SMS():
31  message = Client.messages.create(
32  body="ALERT!! THE WATER QUALITY IS DEGRADED",
33  from_=keys.twilio_number, to = keys.target_number)
34  print(message.body)
35
36  if temperature>70 or pH<6 or turbidity>500: SMS()
37
38  def myOnPublishCallback():  print("Published pH= %s" % pH, "Turbidity:%s" % turbidity, "Temperature:%s" % temperature)
39
40
41  success = deviceCli.publishEvent("demo", "json", data, qos=0, on_publish=myOnPublishCallback)
42  if not success: print("Not Connected to ibmiot") time.sleep(5)
43  deviceCli.commandCallback = myCommandCallback deviceCli.disconnect()
44
```

OUTPUT


```
Published pH= 5 Turbidity:36 Temperature:79
Published pH= 2 Turbidity:311 Temperature:92
Published pH= 4 Turbidity:420 Temperature:10
Published pH= 13 Turbidity:655 Temperature:76
Published pH= 2 Turbidity:991 Temperature:2
Published pH= 3 Turbidity:521 Temperature:77
Published pH= 11 Turbidity:565 Temperature:65
Published pH= 14 Turbidity:914 Temperature:23
Published pH= 2 Turbidity:190 Temperature:18
Command Received: lighton
Led is on
Command Received: lighton
Led is on
Command Received: lighton
Led is on
Published pH= 13 Turbidity:641 Temperature:70
Command Received: lighton
Led is on
Published pH= 2 Turbidity:907 Temperature:7
Published pH= 7 Turbidity:343 Temperature:67
Published pH= 11 Turbidity:41 Temperature:69
Published pH= 2 Turbidity:30 Temperature:45
Published pH= 3 Turbidity:948 Temperature:39
Published pH= 2 Turbidity:114 Temperature:27
Published pH= 5 Turbidity:936 Temperature:0
Published pH= 14 Turbidity:524 Temperature:1
Published pH= 11 Turbidity:685 Temperature:12
```
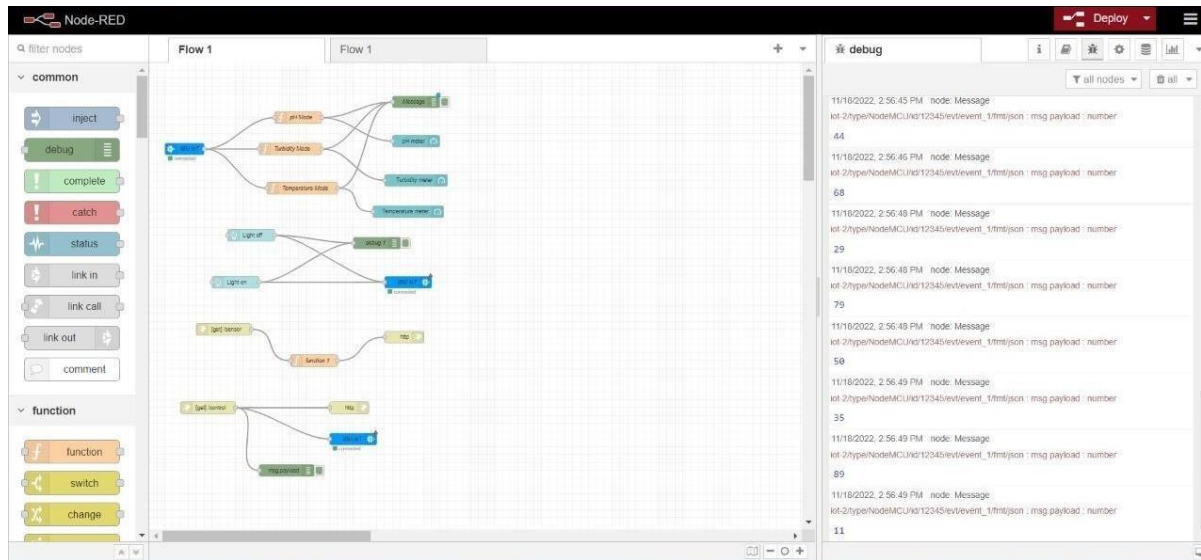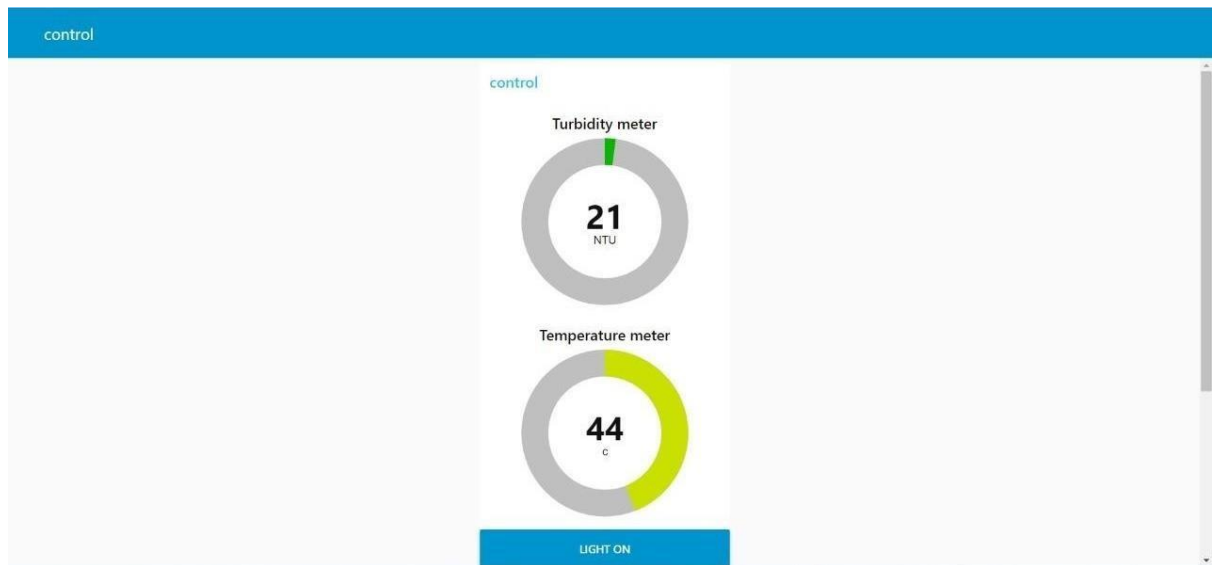
DEVELOP A WEB APPLICATION USING NODE-RED SERVICES
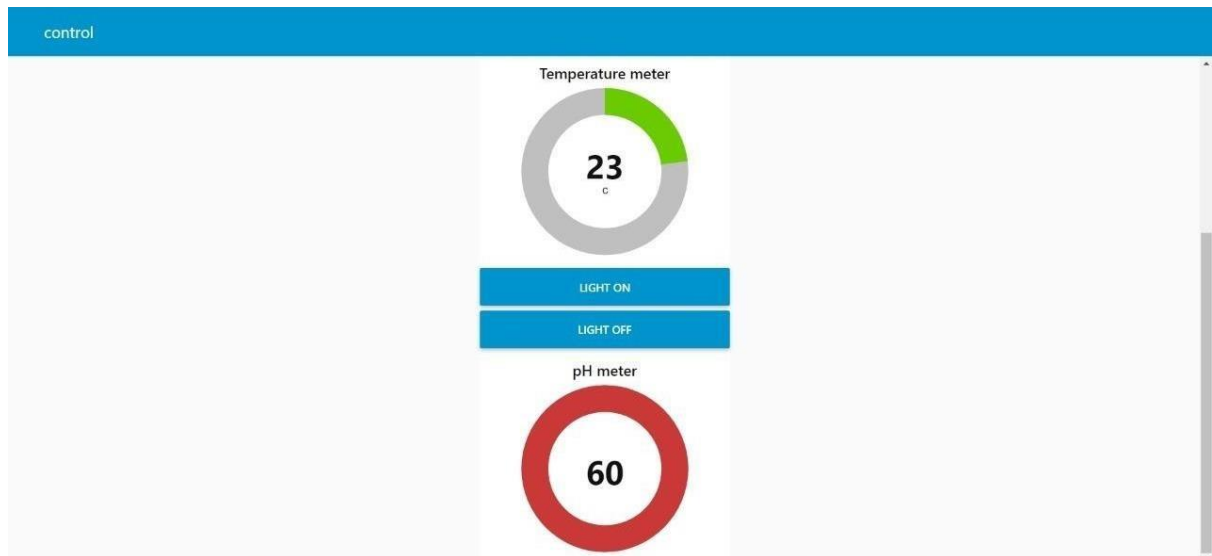
DEVELOP THE WEB APPLICATION USING NODE-RED

USING DASHBOARD NODES FOR CREATING UI(WEB APP)
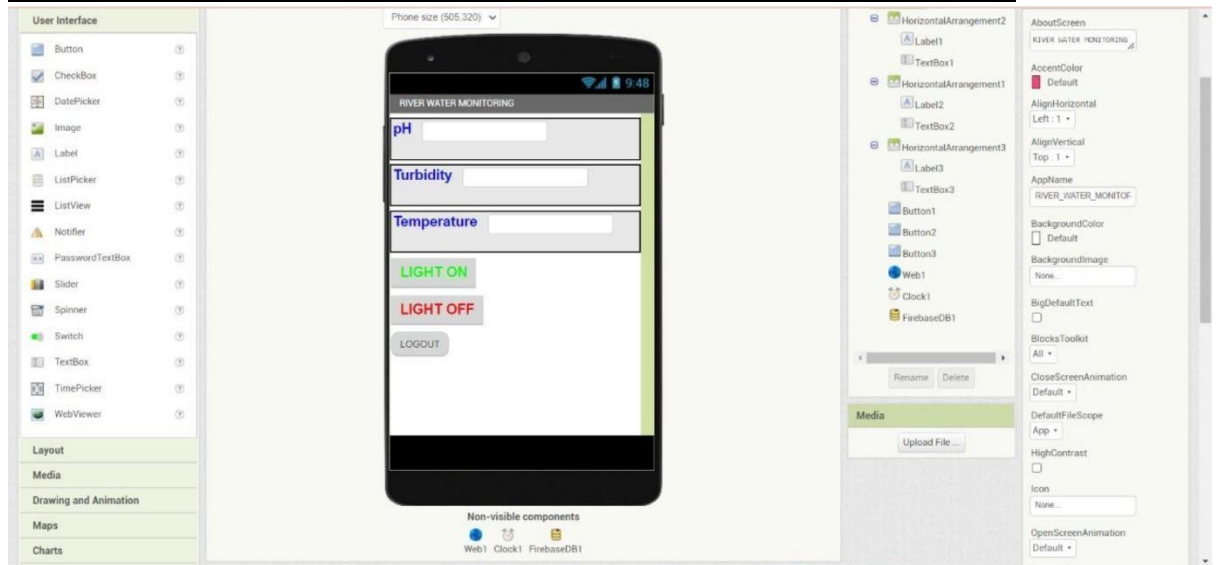
CREATE AN HTTP REQUESTS TO COMMUNICATE WITH MOBILE APP

BUILDING MOBILE APP

DESIGN YOUR UI TO DISPLAY THE WATER,TURBIDITY,PH VALUES

CONFIGURE THE APPLICATION TO RECEIVE THE DATA FROM CLOUD