CAPE INSTITUTE OF TECHNOLOGY

LEVINJIPURAM

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

IBM NALAIYA THIRAN

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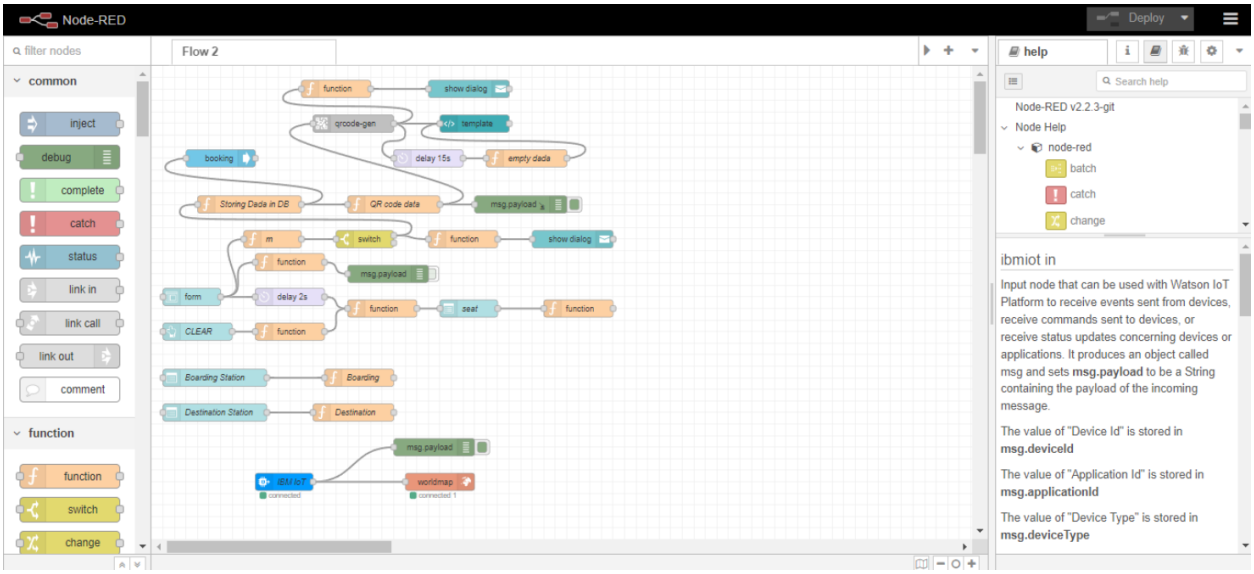
TEAM ID:PNT2022TMID34365

PROJECT NAME:SMART SOLUTIONS FOR RAILWAYS

SPRINT 3

Developer web application:node red program



Qr code generation:

```
Import  cv2
import  numpy  as np
import  time
import  pyzbar . pyzbar as puzbar
from  ibmcloudant . cloudant_v1 import  cloudantv1
from  ibmcloudant  import couchDbsessionAuthenticator
from ibm_cloud_sdk_core.Authenticators  import  BasicAuhtentication


authenticator=BasicAuthenticator('apikey-v2-
16u3crmdpkghhxefdikvpssoh5fwezrmuup5fv5g3ubz','b0ab119f45d3e6255eabb978')
service =cloudantv1(authenticator=authenticator)
service.set_service_url('https://apikey-v2-
                        16u3crmdpkghhxefdikvpssoh5fwezrmuup5fv5g3ubz:b0ab119f45d3e6255eabb978')
cap = cv2.videoCapture(0)
 font = cv2.FONT_HERSHEY_PLAIN
                                while True:
                                _, frame = cap.read(0)
                                decodeObjects = pyzbar.decode(frame)
```

```
                    for obj in decodeObjects:
                    #print("Data",obj.data)
                    a=obj.data.decode('UTF-8')
                    cv2.putText(frame,"Ticket",(50, 50),font, 2,
                    (255,0, 0), 3)
                    #print(a)
                    try:
                    responce = service.get_document (
                    db='booking',
                    doc_id = a
                    ).get_result()
                    print(response)
                    time.sleep(5)
                    except Exception as e:
                    print ("Not valid Ticket")
                    time.sleep(5)

cap.imshow("Frame", frame)
if cv2.waitKey(1) & 0XFF == ord('q'):
break
cap.release()
cv2.destroyAllWindows()
client.disconnect()
```

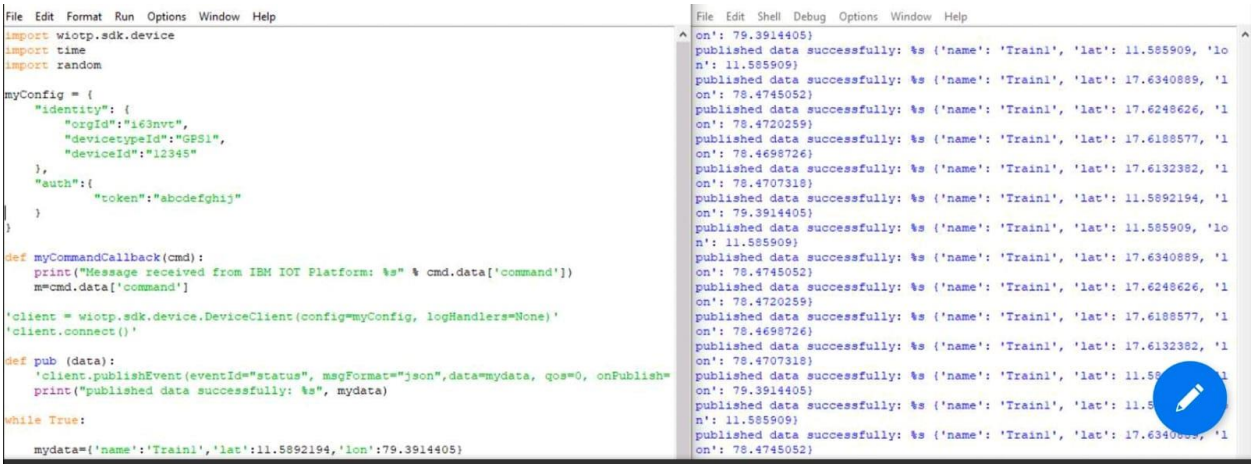
Ticket booking program:

```
1.      import wiotp.sdk.device
2.      import time
3.      import random
4.      myConfig = {
5.      "identity": {
6.      "orgId":"i63nvt",
7.      "devicetypeId":"GPS1",
8.      "deviceId":"i2345"
9.      },
10.     "auth":{
```

```
                "token":"abcdefghij"
                }
                }

        def myCommandCallback(cmd):
        print("Message received from IBM IOT Platform: %s" % cmd.data['command'])
        m=cmd.data['command']

'client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)' 'client.connect()'

        def pub (data):
        'client.publishEvent(eventId="status", msgFormat="json",data=mydata, qos=0, onPublish=None)'
        print("published data successfully: %s", mydata)

while True:

        mydata={'name':'Train1','lat':17.6387448,'lon': 78.4754336}
        pub(mydata)
        time.sleep(3)
        #mydata={'name':'Train2','lat':17.6387448,'lon': 78.4754336}
        #pub(mydata)
        #time.sleep(3)
        mydata={'name':'Train1','lat':17.6341908,'lon': 78.4744722}
        pub(mydata)
        time.sleep(3)
        mydata={'name':'Train1','lat':17.6340889,'lon': 78.4745052}
        pub(mydata)
        time.sleep(3)
        mydata={'name':'Train1','lat':17.6248626,'lon': 78.4720259}
        pub(mydata)
        time.sleep(3)
        mydata={'name':'Train1','lat':17.6188577,'lon': 78.4698726}
        pub(mydata)
        time.sleep(3)
```

```
mydata={'name':'Train1','lat':17.6132382,'lon': 78.4707318}
pub(mydata)
time.sleep(3)
client.commandCallback=mycommanCallbak
client.disconnect()
```

Output:

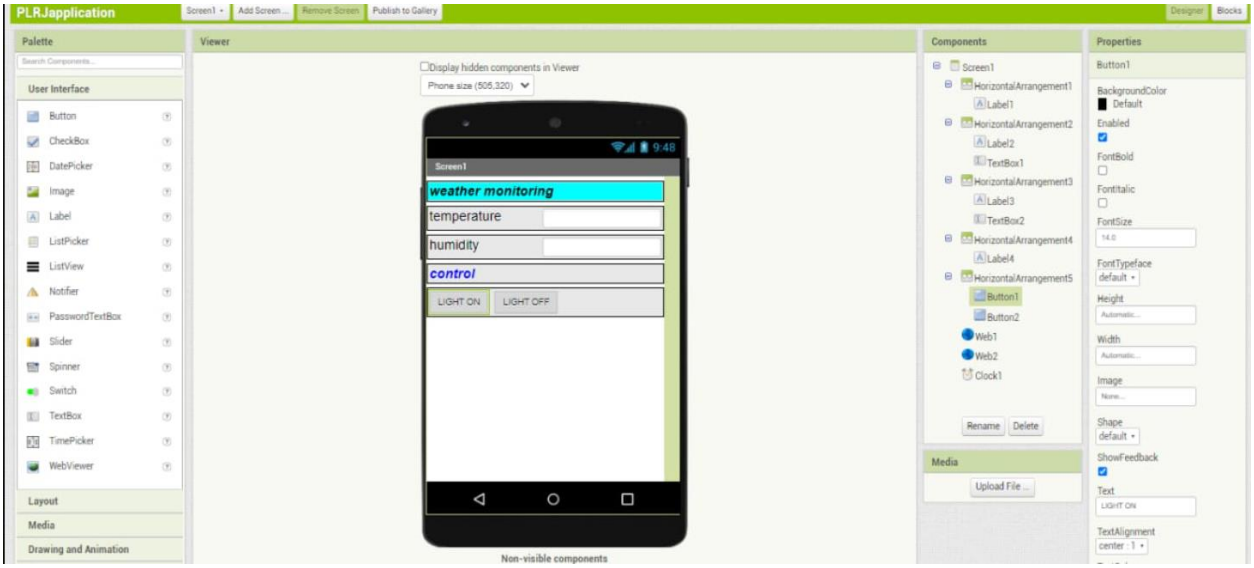


```
File  Edit  Format  Run  Options  Window  Help
import wiotp.sdk.device
import time
import random

myConfig = {
    "identity": {
        "orgId":"i63nvt",
        "devicetypeId":"GPS1",
        "deviceId":"12345"
    },
    "auth":{
            "token":"abcdefghij"
    }
}

def myCommandCallback(cmd):
    print("Message received from IBM IOT Platform: %s" % cmd.data['command'])
    m=cmd.data['command']

'client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)'
'client.connect()'

def pub (data):
    'client.publishEvent(eventId="status", msgFormat="json",data=mydata, qos=0, onPublish=
    print("published data successfully: %s", mydata)

while True:

    mydata={'name':'Train1','lat':11.5892194,'lon':79.3914405}
```

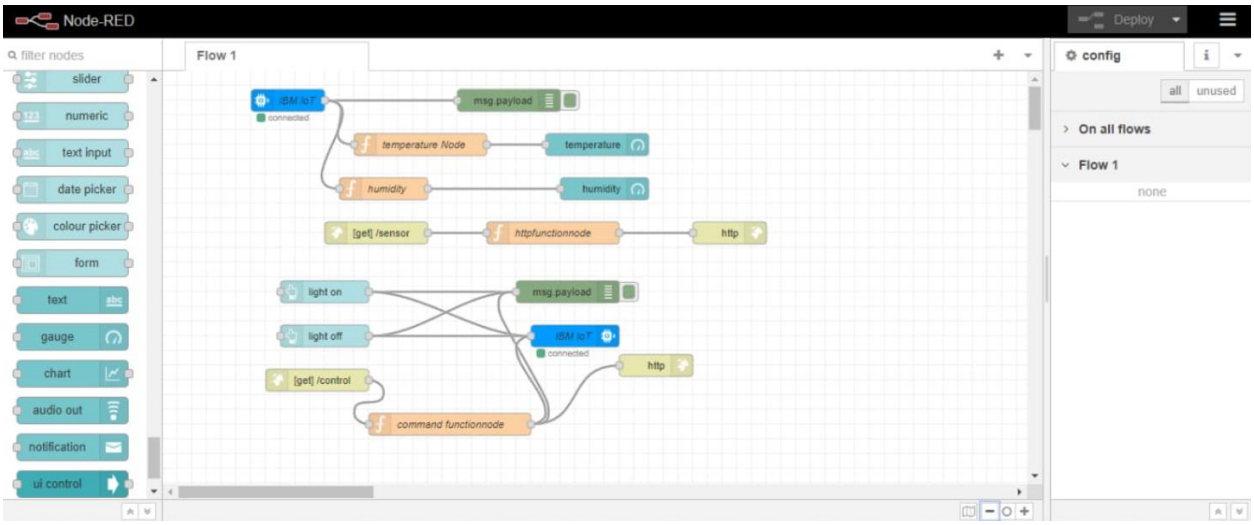
```
File  Edit  Shell  Debug  Options  Window  Help
on': 79.3914405}
published data successfully: %s {'name': 'Train1', 'lat': 11.585909, 'lo
n': 11.585909}
published data successfully: %s {'name': 'Train1', 'lat': 17.6340889, '1
on': 78.4745052}
published data successfully: %s {'name': 'Train1', 'lat': 17.6248626, '1
on': 78.4720259}
published data successfully: %s {'name': 'Train1', 'lat': 17.6188577, '1
on': 78.4698726}
published data successfully: %s {'name': 'Train1', 'lat': 17.6132382, '1
on': 78.4707318}
published data successfully: %s {'name': 'Train1', 'lat': 11.5892194, '1
on': 79.3914405}
published data successfully: %s {'name': 'Train1', 'lat': 11.585909, 'lo
n': 11.585909}
published data successfully: %s {'name': 'Train1', 'lat': 17.6340889, '1
on': 78.4745052}
published data successfully: %s {'name': 'Train1', 'lat': 17.6248626, '1
on': 78.4720259}
published data successfully: %s {'name': 'Train1', 'lat': 17.6188577, '1
on': 78.4698726}
published data successfully: %s {'name': 'Train1', 'lat': 17.6132382, '1
on': 78.4707318}
published data successfully: %s {'name': 'Train1', 'lat': 11.58
on': 79.3914405}
published data successfully: %s {'name': 'Train1', 'lat': 11.5
n': 11.585909}
published data successfully: %s {'name': 'Train1', 'lat': 17.6340889, '1
on': 78.4745052}
```

MIT INVERTER:

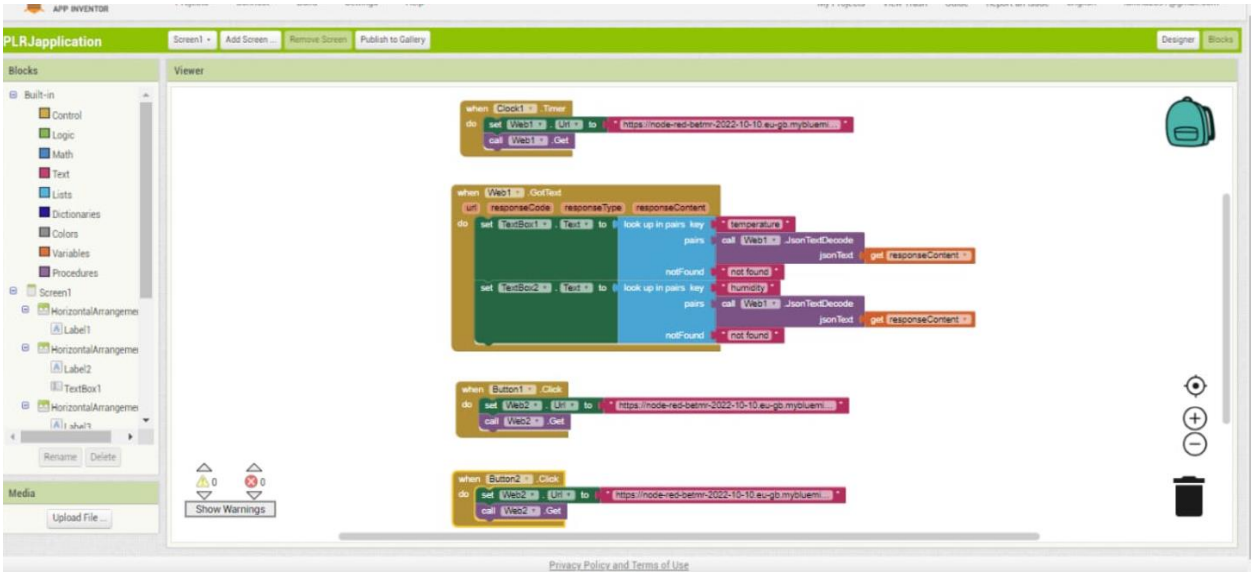
App design model:



Node red flow:



Create mit app inverter:



Connecting mit app inverter:

Connect bar code:

Software screen mobile phone: