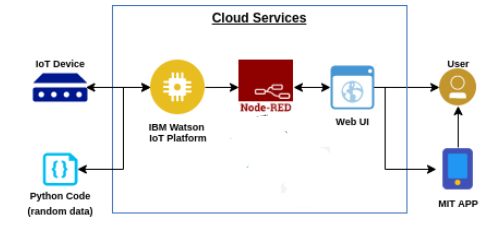
Predictive maintenance of industrial motors

Introduction

Industrial environmental conditions have been upgrading day by day with newly developing automation technology. And,as a result of getting rid of conventional procedures of manufacturing, this leads to an increase in huge workloads. The next gen industries will be more advanced and automated as compared with existing ones. This brings a new terminology;

“smart industries”. In this new era, Monitoring as well as cotrolling of various industrial applications is challenging as ever. The Internet Of Things, as an emerging technology that brought about rapid advancements in modern technologies, has attracted a lot of attention and is expected to bring benefits to numeurous applications. The newly introduced concept is providing a helping hand to achieve Industrial automation through remote access.

Block diagram



Demonstration of project work

PROJECT SCREENSHOTS

# Code:

import wiotp.sdk.device

import time

import random

myConfig = {

"identity": {

"orgId": "vadk7x",

"typeId": "data",

"deviceId":"3456"

},

"auth": {

"token": "12345678"

}

}

def myCommandCallback(cmd):

print("Message received from IBM IoT Platform: %s" % cmd.data['command'])

i=cmd.data['command']

if i=='motoron':

print("Motor is on")

elif i=='motoroff':

print("motor is off")

elif i=='lighton':

print("light is on")

elif i=='lightoff':

print("light is off")

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

client.connect()

while True:

temp=random.randint(16,50)

hum=random.randint(10,100)

vib = random.randint(50,100)

curr = random.randint(5,30)

myData={'temperature':temp, 'humidity':hum,'vibration':vib , 'current':curr}

client.publishEvent(eventId="status", msgFormat="JSON", data=myData, qos=0, onPublish=None)

print("Published data Successfully: %s", myData)

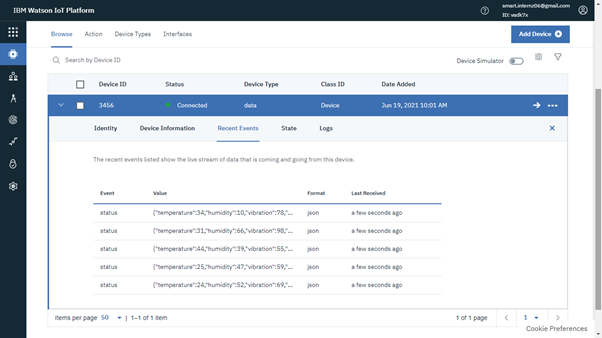
client.commandCallback = myCommandCallback

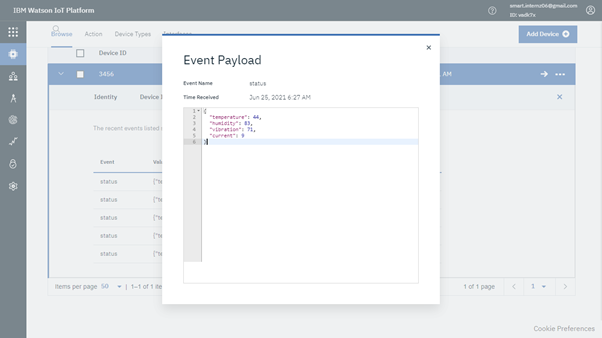
time.sleep(2)

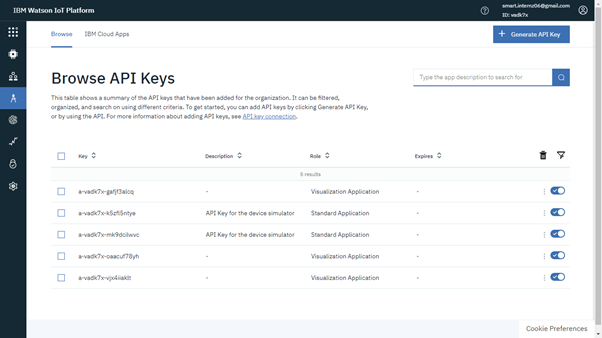
client.disconnect()

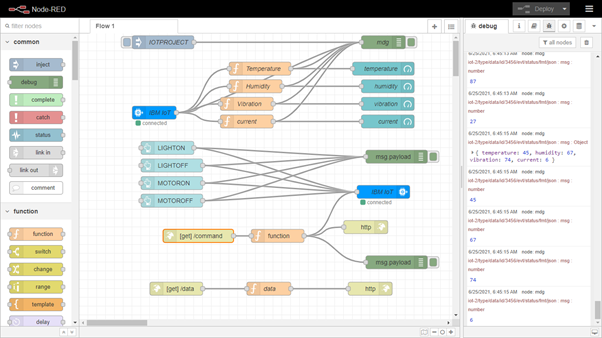
Python output:

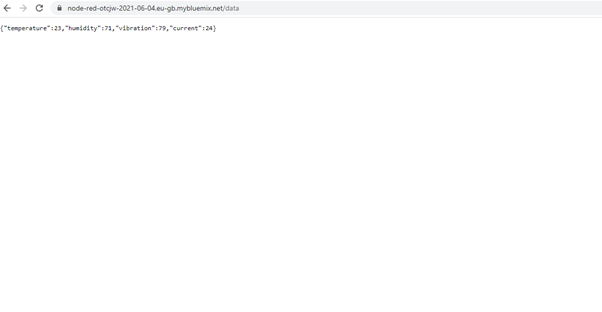




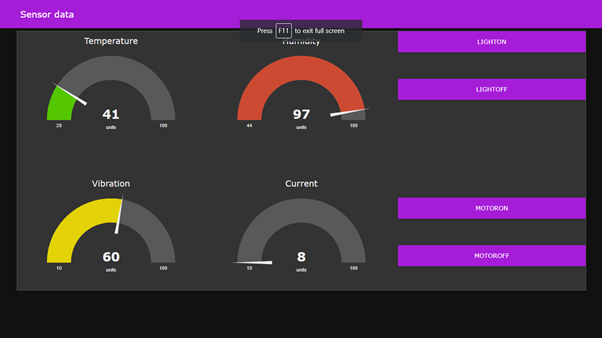


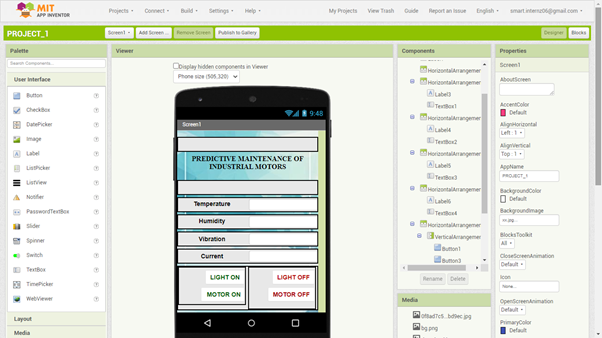


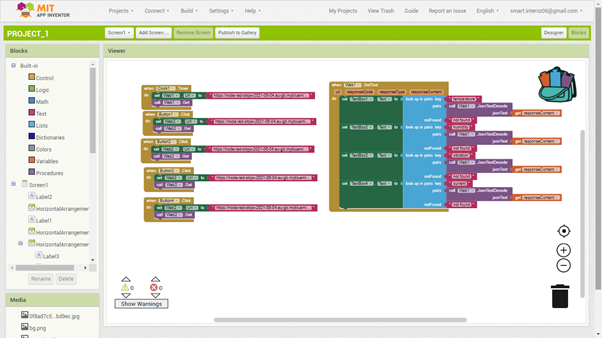


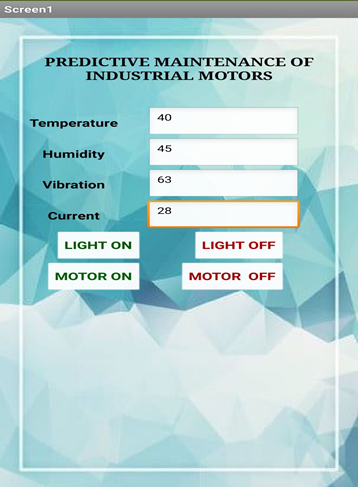












Advantages

•Reduction in maintenance cost.

•Reduction in machine failures.

•Reduced downtime for repairs.

•Reduced stock of spare parts.

•Increased service life of parts.

•Increased production.

•Improved operator safety.

•Verification of repairs.

Disadvantages

* Increase investment in diagnostic equipment
* Increase investment in staff training
* Savings potential is readily seen by management

Conclusion

This paper focused on the problem of carrying out predictive maintenance in industrial motors and presented the results of the preliminary data analysis and feature selection that were performed on a sample of the collected data. The derived data from IoT device gives the status of industrial motors about temperature , humidity.

So predictive maintenance of industrial motors plays a major role in maintaining industrial production. It is possible to have a successful preventive maintenance program. From a cost viewpoint it is essential, but it does entail risk;

In order to minimize risk preventive maintenance has to be carefully planned and carried out by well trained workers.

A project by ANKITHA,ALANKRITH ,ANUDEEP and KARTHIK