CREATION OF NODE-RED

Date	16 November 2022
Team ID	PNT2022TMID36807
Project Name	Real – time River Water Quality Monitoring and Control System
Maximum Marks	4 Marks

Our task to create node-red is successfully done. A screenshot of this node-red screen is attached below:
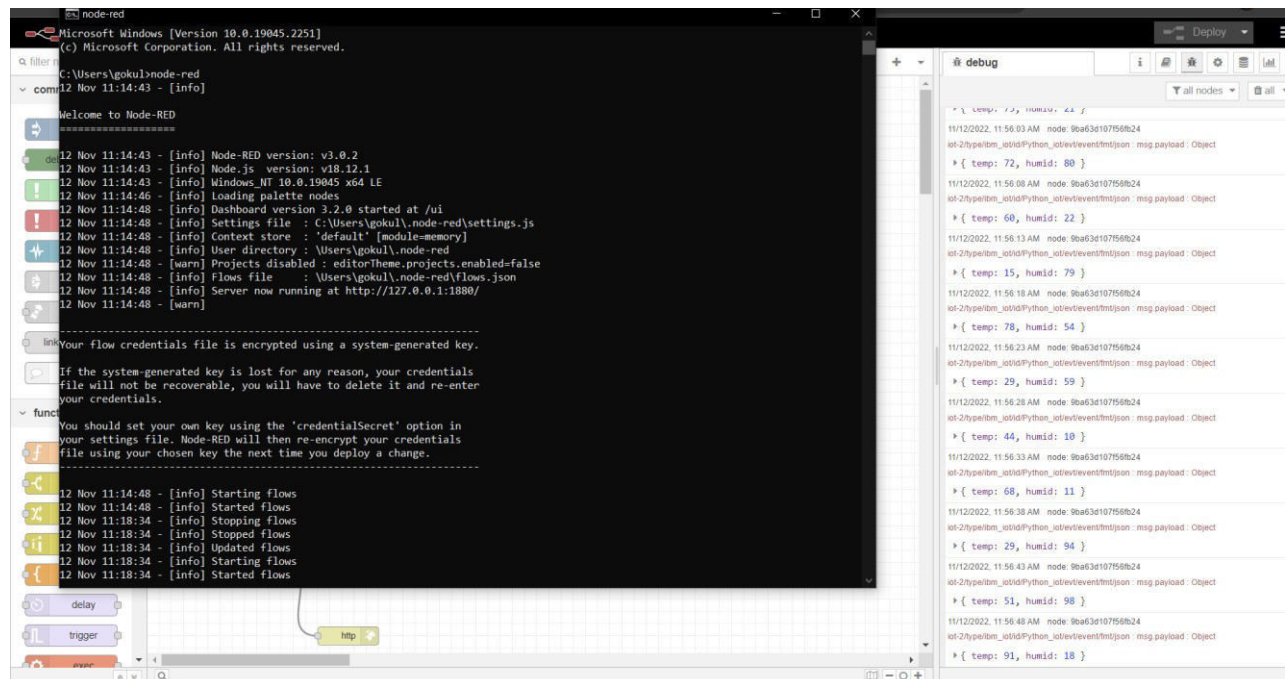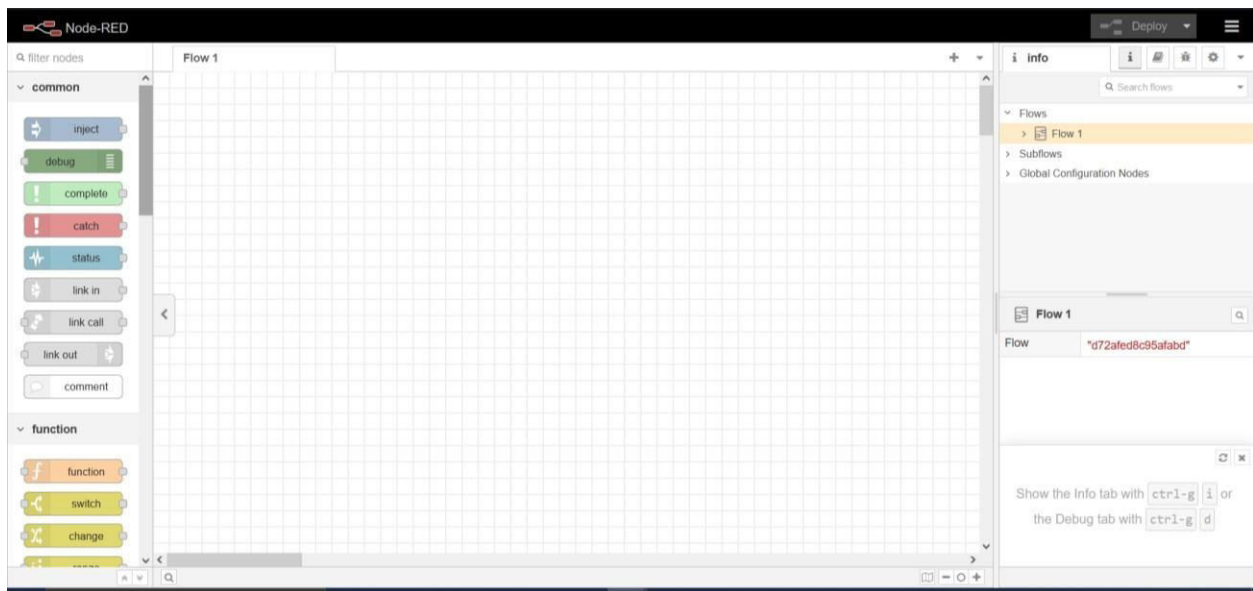
```python
        deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method": authMethod,
                         "auth-token": authToken}
        deviceCli = ibmiotf.device.Client(deviceOptions)
    # ...............................................

except Exception as e:
    print("Caught exception connecting device: %s" % str(e))
    sys.exit()

deviceCli.connect()

while True:
    pH = random.randint(0,100)
    turbidity = random.randint(0,100)
    # Send Temperature & Humidity to IBM Watson
    data = {'temp':pH, 'humid':turbidity}   #output


    # print data
    def myOnPublishCallback():
        print("Data publish ",data, "to IBM Watson")


    success = deviceCli.publishEvent("event", "json", data, 0, myOnPublishCallback)
    if not success:
        print("Not connected to IoTF")
    time.sleep(5)
```

Terminal output:

```
Data publish {'temp': 60, 'humid': 24} to IBM Watson
Data publish {'temp': 83, 'humid': 94} to IBM Watson
Data publish {'temp': 0, 'humid': 33} to IBM Watson
Data publish {'temp': 22, 'humid': 3} to IBM Watson
Data publish {'temp': 12, 'humid': 91} to IBM Watson
Data publish {'temp': 60, 'humid': 85} to IBM Watson
Data publish {'temp': 22, 'humid': 2} to IBM Watson
Data publish {'temp': 71, 'humid': 46} to IBM Watson
Data publish {'temp': 2, 'humid': 76} to IBM Watson
Data publish {'temp': 72, 'humid': 60} to IBM Watson
```

Node-RED — Flow 1 — Real Time water monitoring & control system

```
11/12/2022, 11:53:27 AM  node: 9ba63d107f56fb24
iot-2/type/ibm_iot/id/Python_iot/evt/event/fmt/json : msg.payload : Object
▶ { temp: 89, humid: 93 }

11/12/2022, 11:53:32 AM  node: 9ba63d107f56fb24
iot-2/type/ibm_iot/id/Python_iot/evt/event/fmt/json : msg.payload : Object
▶ { temp: 20, humid: 75 }

11/12/2022, 11:53:37 AM  node: 9ba63d107f56fb24
iot-2/type/ibm_iot/id/Python_iot/evt/event/fmt/json : msg.payload : Object
▶ { temp: 27, humid: 77 }

11/12/2022, 11:53:43 AM  node: 9ba63d107f56fb24
iot-2/type/ibm_iot/id/Python_iot/evt/event/fmt/json : msg.payload : Object
▶ { temp: 68, humid: 37 }

11/12/2022, 11:53:48 AM  node: 9ba63d107f56fb24
iot-2/type/ibm_iot/id/Python_iot/evt/event/fmt/json : msg.payload : Object
▶ { temp: 7, humid: 32 }

11/12/2022, 11:53:53 AM  node: 9ba63d107f56fb24
iot-2/type/ibm_iot/id/Python_iot/evt/event/fmt/json : msg.payload : Object
▶ { temp: 37, humid: 51 }

11/12/2022, 11:53:55 AM  node: b544dba163ec4ab4
msg.payload : string[9]
"Motor ON"

11/12/2022, 11:53:56 AM  node: b544dba163ec4ab4
msg.payload : string[9]
"Motor OFF"

11/12/2022, 11:53:58 AM  node: 9ba63d107f56fb24
iot-2/type/ibm_iot/id/Python_iot/evt/event/fmt/json : msg.payload : Object
▶ { temp: 54, humid: 36 }

11/12/2022, 11:54:03 AM  node: 9ba63d107f56fb24
iot-2/type/ibm_iot/id/Python_iot/evt/event/fmt/json : msg.payload : Object
▶ { temp: 86, humid: 26 }
```