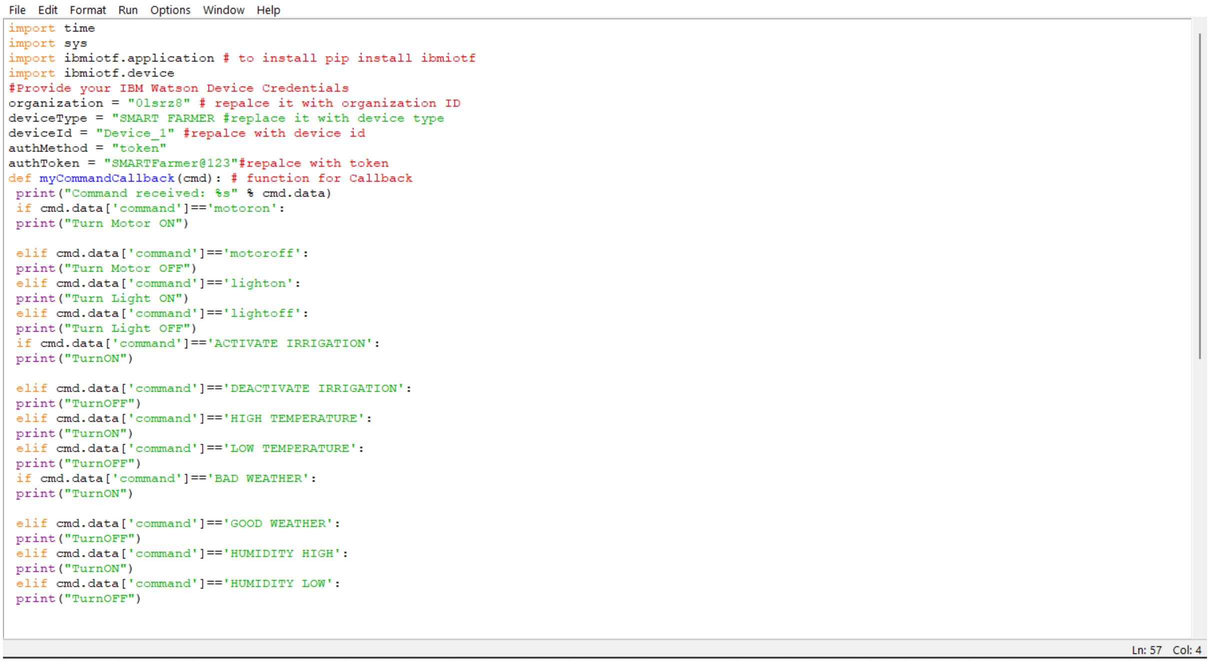
TEAM ID	PNT2022TMID12914
Project Name	Smart Farmer - IOT Enabled Smart Farming Application

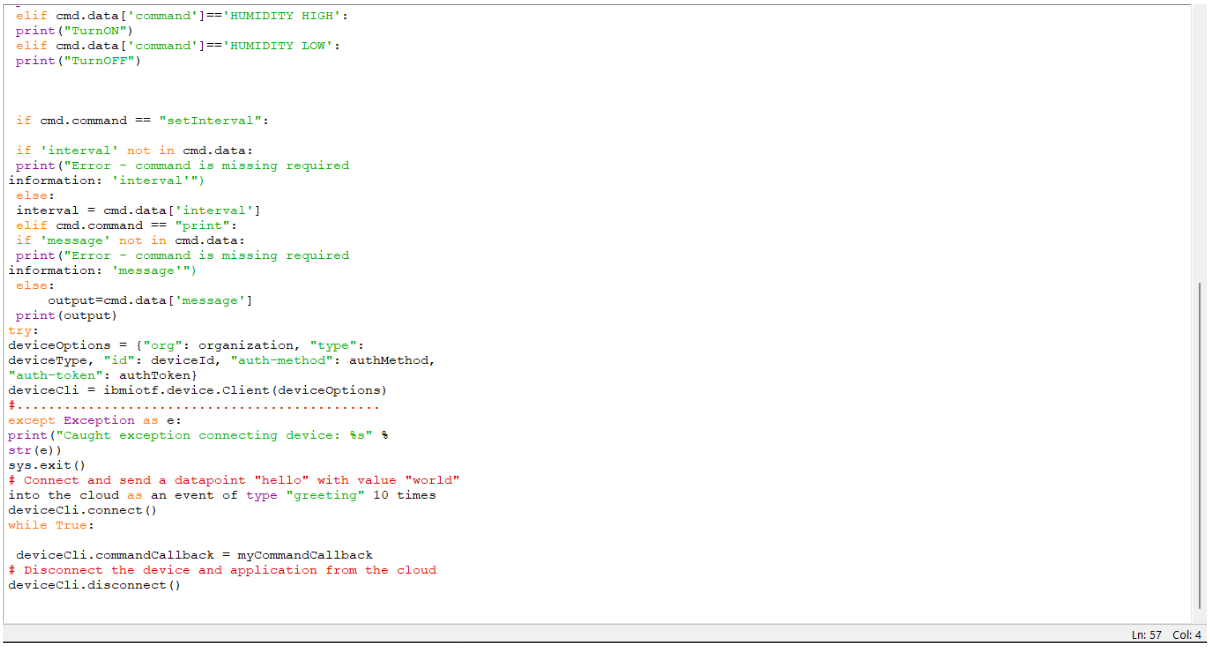
PYTHON CODE :

```
import time
import sys
import ibmiotf.application # to install pip install ibmiotf
import ibmiotf.device
#Provide your IBM Watson Device Credentials
organization = “jztdcw”
deviceType = "NodeMCU"
deviceId = " node-mcu-4321 "
authMethod = "use-token-auth"
authToken = "987654321"
 def myCommandCallback(cmd): # function for Callback
 print("Command received: %s" % cmd.data)
 if cmd.data['command']=='motoron':
 print("Turn Motor ON")

 elif cmd.data['command']=='motoroff':
 print("Turn Motor OFF")
 elif cmd.data['command']=='lighton':
 print("Turn Light ON")
 elif cmd.data['command']=='lightoff':
 print("Turn Light OFF")
 if cmd.data['command']=='ACTIVATE IRRIGATION':
 print("TurnON")

 elif cmd.data['command']=='DEACTIVATE IRRIGATION':
 print("TurnOFF")
 elif cmd.data['command']=='HIGH TEMPERATURE':
 print("TurnON")
 elif cmd.data['command']=='LOW TEMPERATURE':
 print("TurnOFF")
 if cmd.data['command']=='BAD WEATHER':
 print("TurnON")

 elif cmd.data['command']=='GOOD WEATHER':
 print("TurnOFF")
 elif cmd.data['command']=='HUMIDITY HIGH':
 print("TurnON")
 elif cmd.data['command']=='HUMIDITY LOW':
 print("TurnOFF")



 if cmd.command == "setInterval":

 if 'interval' not in cmd.data:
 print("Error - command is missing required
information: 'interval'")
 else:
 interval = cmd.data['interval']
 elif cmd.command == "print":
 if 'message' not in cmd.data:
 print("Error - command is missing required
information: 'message'")
 else:
     output=cmd.data['message']
 print(output)
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()

# Connect and send a datapoint "hello" with value "world"

into the cloud as an event of type "greeting" 10 times

deviceCli.connect()

while True:


 deviceCli.commandCallback = myCommandCallback

# Disconnect the device and application from the cloud

deviceCli.disconnect()
```



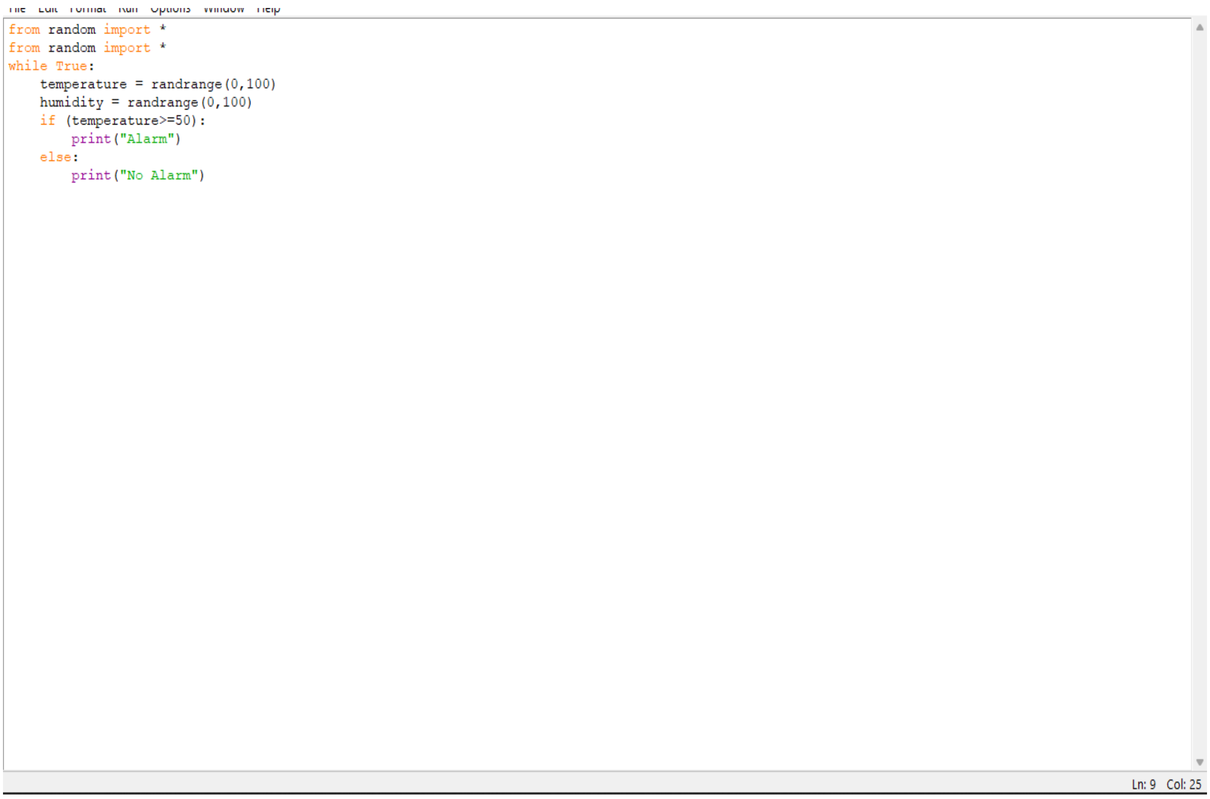
```
import time
import sys
import ibmiotf.application # to install pip install ibmiotf
import ibmiotf.device
#Provide your IBM Watson Device Credentials
organization = "01srz8" # repalce it with organization ID
deviceType = "SMART FARMER #replace it with device type
deviceId = "Device_1" #repalce with device id
authMethod = "token"
authToken = "SMARTFarmer@123"#repalce with token
def myCommandCallback(cmd): # function for Callback
 print("Command received: %s" % cmd.data)
 if cmd.data['command']=='motoron':
 print("Turn Motor ON")

 elif cmd.data['command']=='motoroff':
 print("Turn Motor OFF")
 elif cmd.data['command']=='lighton':
 print("Turn Light ON")
 elif cmd.data['command']=='lightoff':
 print("Turn Light OFF")
 if cmd.data['command']=='ACTIVATE IRRIGATION':
 print("TurnON")

 elif cmd.data['command']=='DEACTIVATE IRRIGATION':
 print("TurnOFF")
 elif cmd.data['command']=='HIGH TEMPERATURE':
 print("TurnON")
 elif cmd.data['command']=='LOW TEMPERATURE':
 print("TurnOFF")
 if cmd.data['command']=='BAD WEATHER':
 print("TurnON")

 elif cmd.data['command']=='GOOD WEATHER':
 print("TurnOFF")
 elif cmd.data['command']=='HUMIDITY HIGH':
 print("TurnON")
 elif cmd.data['command']=='HUMIDITY LOW':
 print("TurnOFF")
```



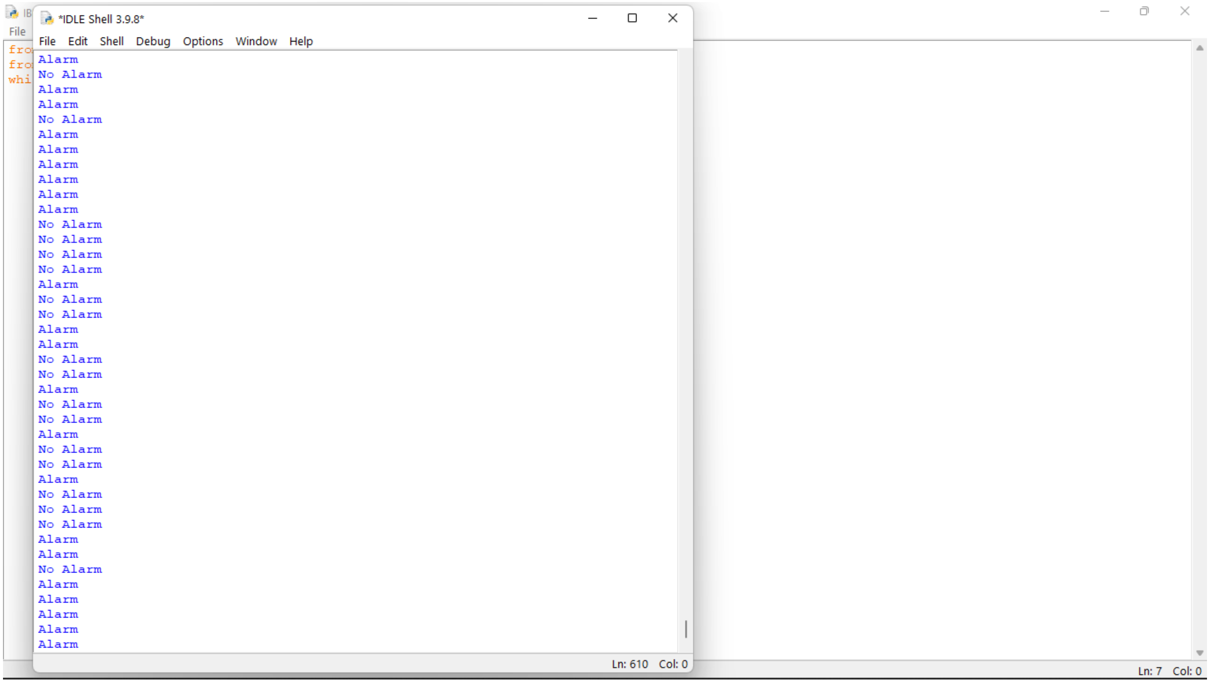
```
 elif cmd.data['command']=='HUMIDITY HIGH':
 print("TurnON")
 elif cmd.data['command']=='HUMIDITY LOW':
 print("TurnOFF")



 if cmd.command == "setInterval":

 if 'interval' not in cmd.data:
 print("Error - command is missing required
information: 'interval'")
 else:
 interval = cmd.data['interval']
 elif cmd.command == "print":
 if 'message' not in cmd.data:
 print("Error - command is missing required
information: 'message'")
 else:
     output=cmd.data['message']
 print(output)
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()
# Connect and send a datapoint "hello" with value "world"
into the cloud as an event of type "greeting" 10 times
deviceCli.connect()
while True:

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

PYTHON CODE FOR TEMPERATURE:

```
from random import *

from random import *

while True:

   temperature = randrange(0,100)

   humidity = randrange(0,100)

   if (temperature>=50):

      print("Alarm")

   else:

      print("No Alarm")
```



```
from random import *
from random import *
while True:
    temperature = randrange(0,100)
    humidity = randrange(0,100)
    if (temperature>=50):
        print("Alarm")
    else:
        print("No Alarm")
```



```
Alarm
No Alarm
Alarm
Alarm
No Alarm
Alarm
Alarm
Alarm
Alarm
Alarm
Alarm
No Alarm
No Alarm
No Alarm
No Alarm
Alarm
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```
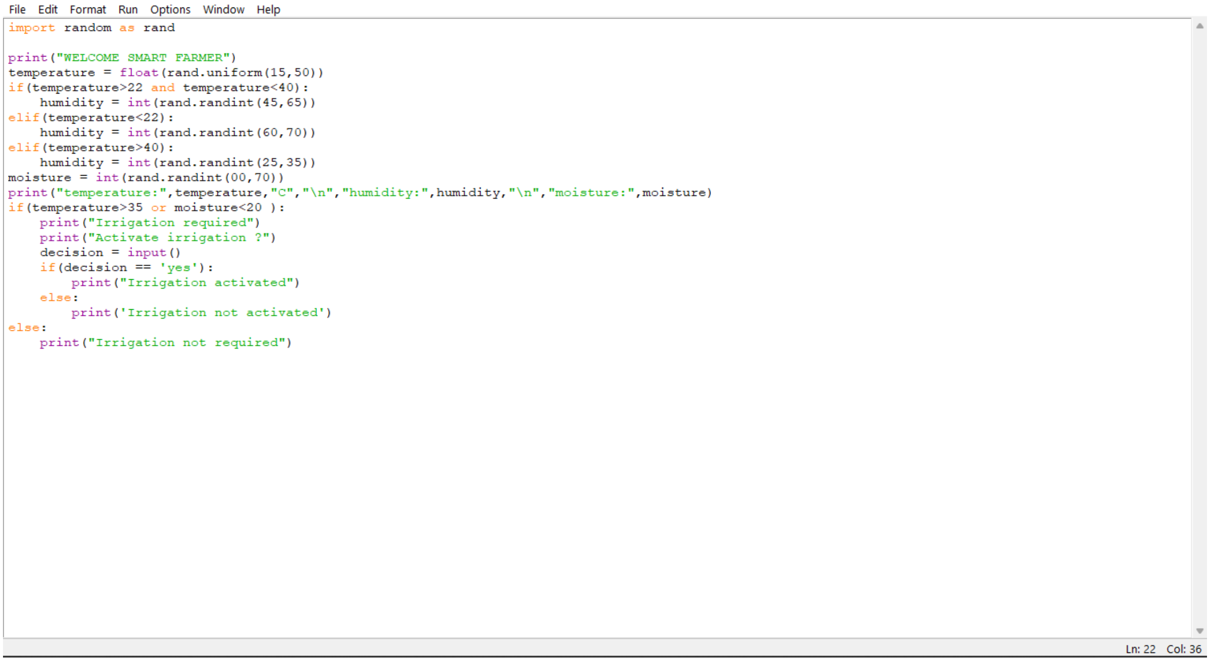

PYTHON CODE :

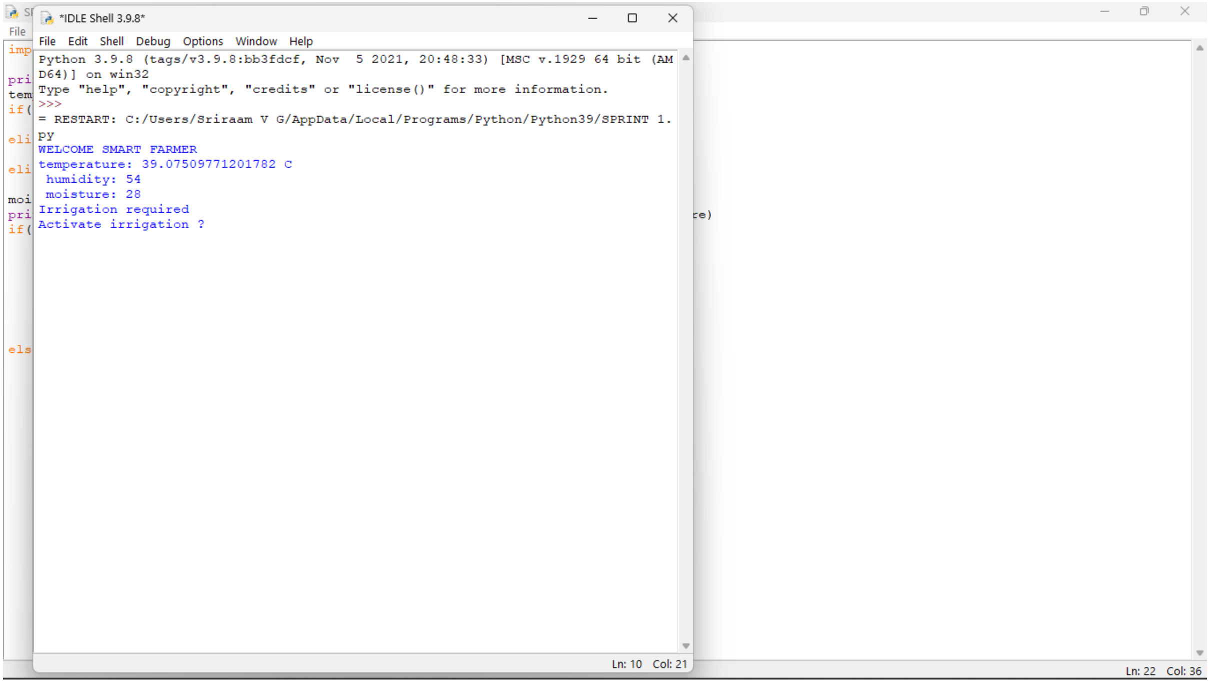
```
import random as rand
```

```
print("WELCOME SMART FARMER")
temperature = float(rand.uniform(15,50))
if(temperature>22 and temperature<40):
    humidity = int(rand.randint(45,65))
elif(temperature<22):
    humidity = int(rand.randint(60,70))
elif(temperature>40):
    humidity = int(rand.randint(25,35))
moisture = int(rand.randint(00,70))
print("temperature:",temperature,"C","\n","humidity:",humidity,"\n","moisture:",moisture)
if(temperature>35 or moisture<20 ):
    print("Irrigation required")
    print("Activate irrigation ?")
    decision = input()
    if(decision == 'yes'):
        print("Irrigation activated")
    else:
        print('Irrigation not activated')
else:
    print("Irrigation not required")
```

OUTPUT:



```
import random as rand

print("WELCOME SMART FARMER")
temperature = float(rand.uniform(15,50))
if(temperature>22 and temperature<40):
    humidity = int(rand.randint(45,65))
elif(temperature<22):
    humidity = int(rand.randint(60,70))
elif(temperature>40):
    humidity = int(rand.randint(25,35))
moisture = int(rand.randint(00,70))
print("temperature:",temperature,"C","\n","humidity:",humidity,"\n","moisture:",moisture)
if(temperature>35 or moisture<20 ):
    print("Irrigation required")
    print("Activate irrigation ?")
    decision = input()
    if(decision == 'yes'):
        print("Irrigation activated")
    else:
        print('Irrigation not activated')
else:
    print("Irrigation not required")
```



```
Python 3.9.8 (tags/v3.9.8:bb3fdcf, Nov  5 2021, 20:48:33) [MSC v.1929 64 bit (AM
D64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>> 
= RESTART: C:/Users/Sriraam V G/AppData/Local/Programs/Python/Python39/SPRINT 1.
py
WELCOME SMART FARMER
temperature: 39.07509771201782 C
 humidity: 54
 moisture: 28
Irrigation required
Activate irrigation ?
```