

PYTHON SCRIPT

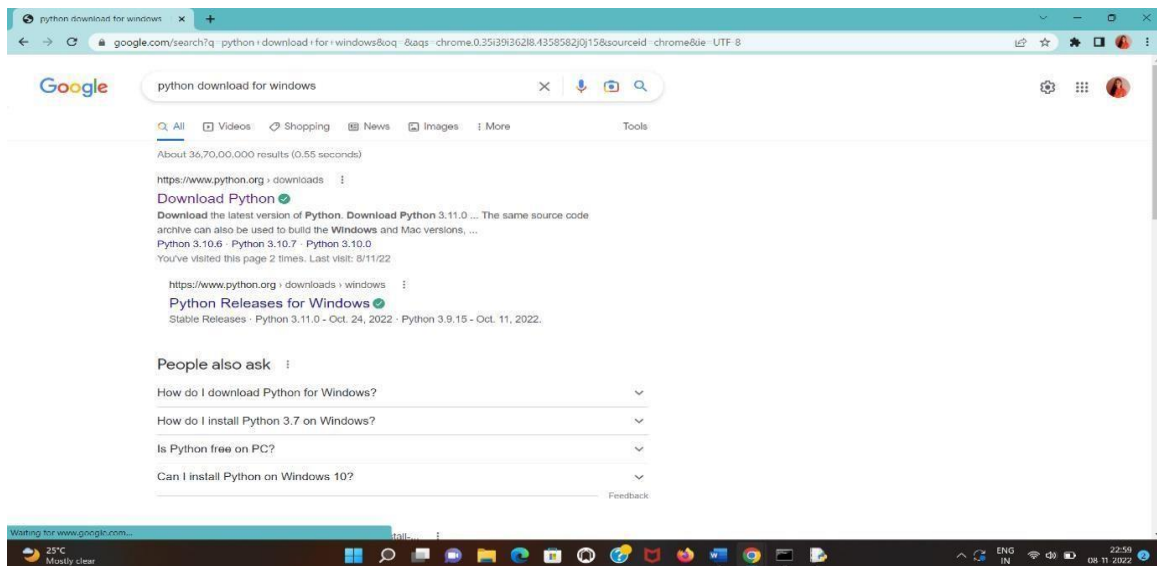
| | |
|-----------------|--|
| Assignment Date | 06 NOVEMBER2022 |
| Team ID | PNT2022TMID32740 |
| Project Name | Gas Leakage Monitoring and Alerting System |

AIM:

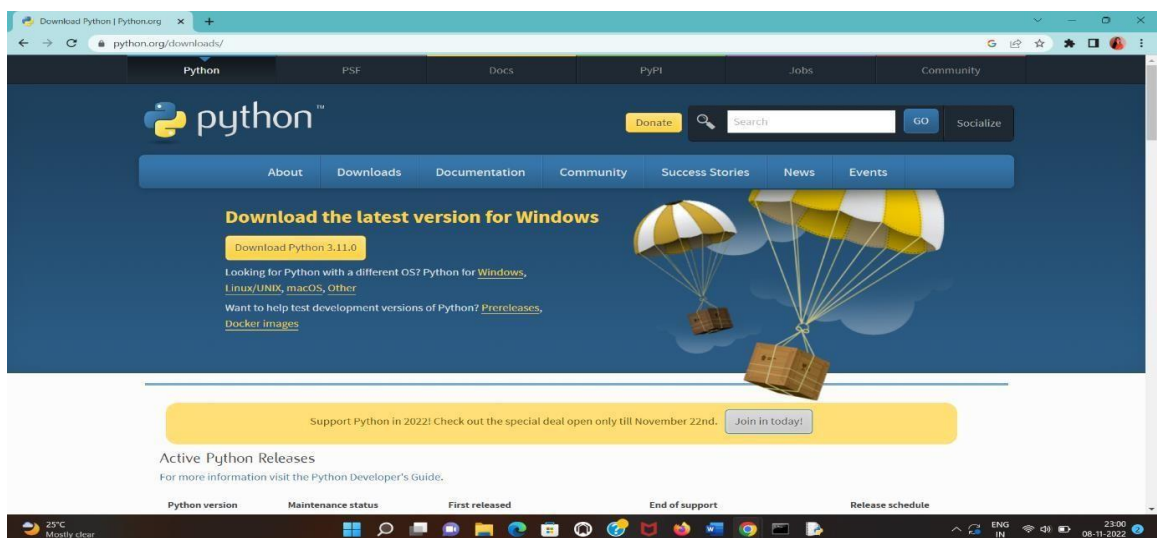
To install python version 3.9.6 and IBM Watson IoT platform packages in python.

STEPS:

1. Search for python for windows in Google search engine.



2. Click the First link..



3. Search for python 3.9.6 version which is suitable for IBM Watson platform.

The screenshot shows the Python.org download page. At the top, there's a navigation bar with 'Download Python | Python.org'. Below it, a table lists recent releases. The main section is titled 'Looking for a specific release?' and 'Python releases by version number:'. It contains a table with columns: Release version, Release date, Download, and Click for more. The table lists several versions, including Python 3.9.8, 3.10.0, 3.7.12, 3.6.15, 3.9.7, 3.8.12, 3.9.6, and 3.8.11. The 'Download' column contains download icons, and the 'Click for more' column contains links to release notes. Below the table, there's a link 'View older releases'. At the bottom, there's a 'Sponsors' section with logos for Bloomberg and Meta.

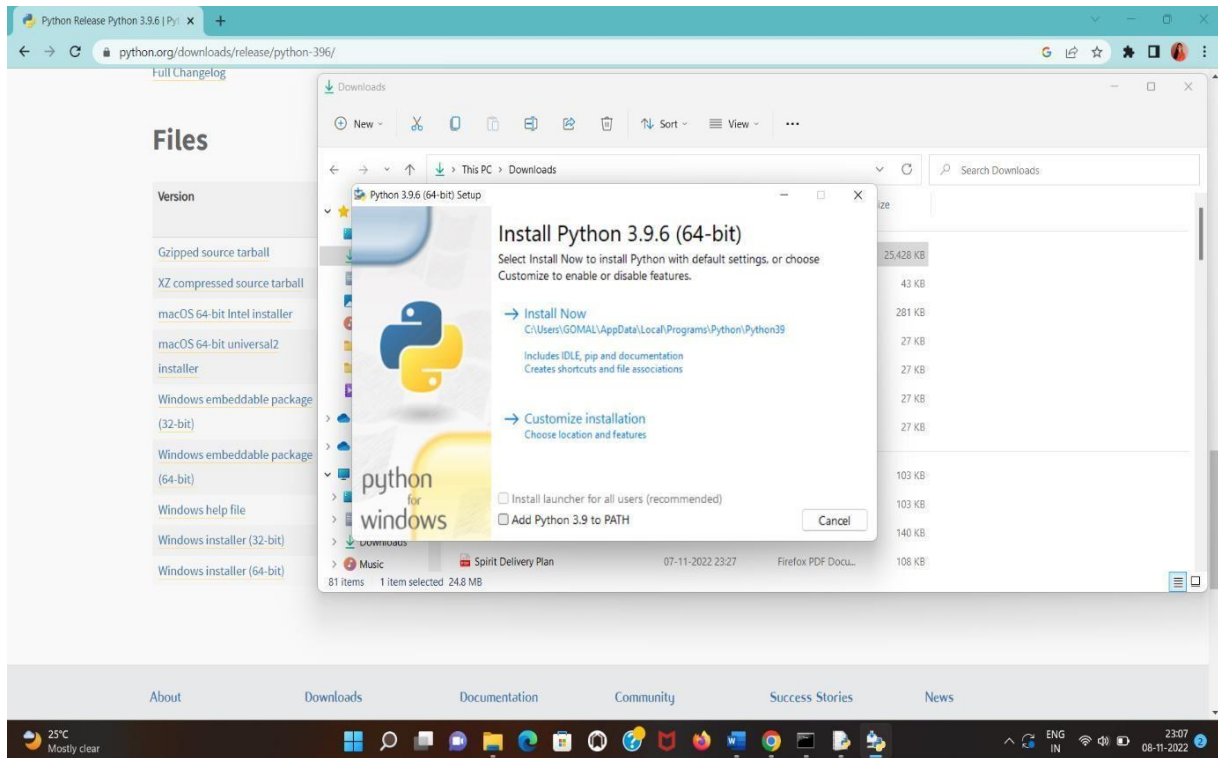
| Release version | Release date | Download | Click for more |
|-----------------|---------------|--------------------------|-------------------------------|
| Python 3.9.8 | Nov. 5, 2021 | Download | Release Notes |
| Python 3.10.0 | Oct. 4, 2021 | Download | Release Notes |
| Python 3.7.12 | Sept. 4, 2021 | Download | Release Notes |
| Python 3.6.15 | Sept. 4, 2021 | Download | Release Notes |
| Python 3.9.7 | Aug. 30, 2021 | Download | Release Notes |
| Python 3.8.12 | Aug. 30, 2021 | Download | Release Notes |
| Python 3.9.6 | June 28, 2021 | Download | Release Notes |
| Python 3.8.11 | June 28, 2021 | Download | Release Notes |

4. Click the python version 3.9.6 and download.

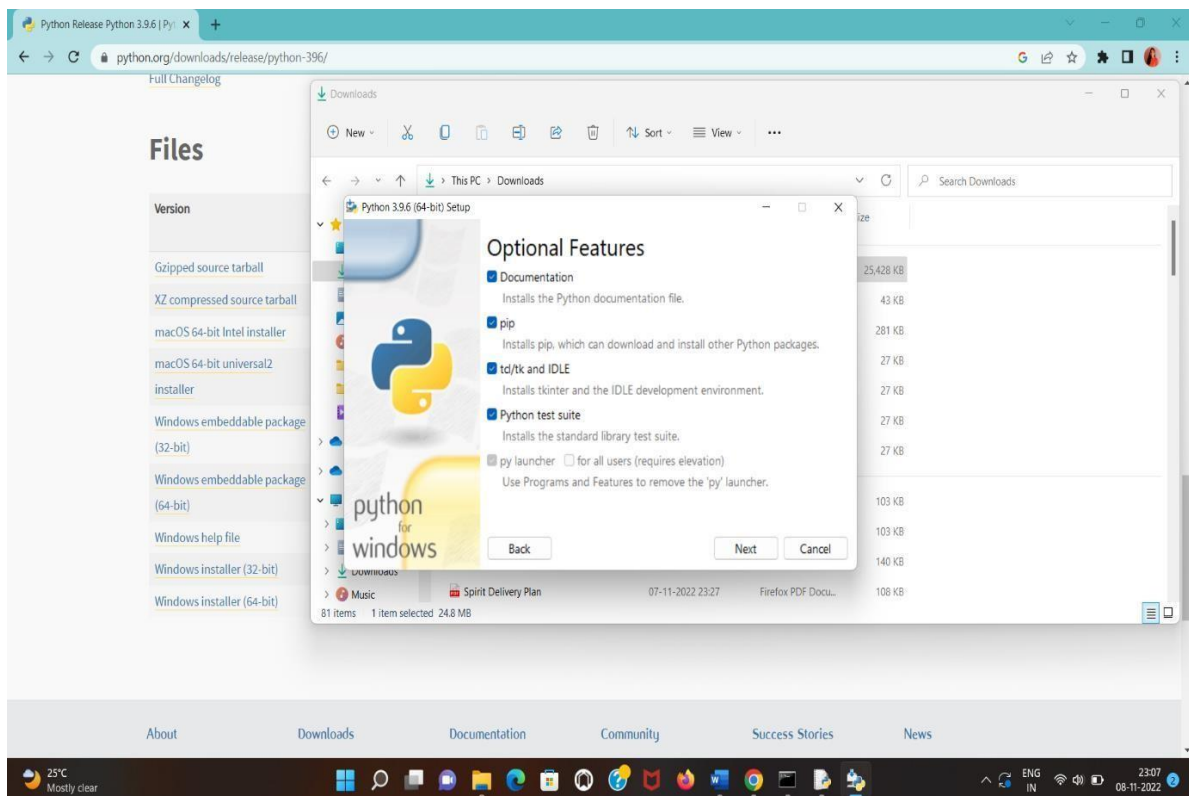
The screenshot shows the Python.org download page for Python 3.9.6. The page title is 'Python Release Python 3.9.6 | Python.org'. Below the title, there's a link 'Full Changelog'. The main section is titled 'Files' and contains a table with columns: Version, Operating System, Description, MD5 Sum, File Size, and GPG. The table lists various files for download, including source tarballs, installers for macOS, Windows, and Linux, and a help file. The 'Download' column contains download icons, and the 'Click for more' column contains links to release notes.

| Version | Operating System | Description | MD5 Sum | File Size | GPG |
|-------------------------------------|------------------|--|----------------------------------|-----------|-----|
| Gzipped source tarball | Source release | | 798b9d3e866e1906f6e32203c4c560fa | 25640094 | SIG |
| XZ compressed source tarball | Source release | | ecc29a7688f86e550d29dba2ee66cf80 | 19051972 | SIG |
| macOS 64-bit Intel installer | macOS | for macOS 10.9 and later | d714923985e0303b9e9b037e57af815 | 29950653 | SIG |
| macOS 64-bit universal2 installer | macOS | for macOS 10.9 and later, including macOS 11 Big Sur on Apple Silicon (experimental) | 93a29856f5863d1b9c1a45c8823e034d | 38033506 | SIG |
| Windows embeddable package (32-bit) | Windows | | 5b9693f74979e86a9d463cf73bf0c2ab | 7599619 | SIG |
| Windows embeddable package (64-bit) | Windows | | 89980d3e54160c10554b01f2b9f0a03b | 8448277 | SIG |
| Windows help file | Windows | | 91482c82390caa62acfdacbaabf618 | 6501645 | SIG |
| Windows installer (32-bit) | Windows | | 90987973d91d4e2cddb86c4e0a54ba7e | 24931328 | SIG |
| Windows installer (64-bit) | Windows | Recommended | ac25cf79f710bf31601ed067ccd07deb | 26037888 | SIG |

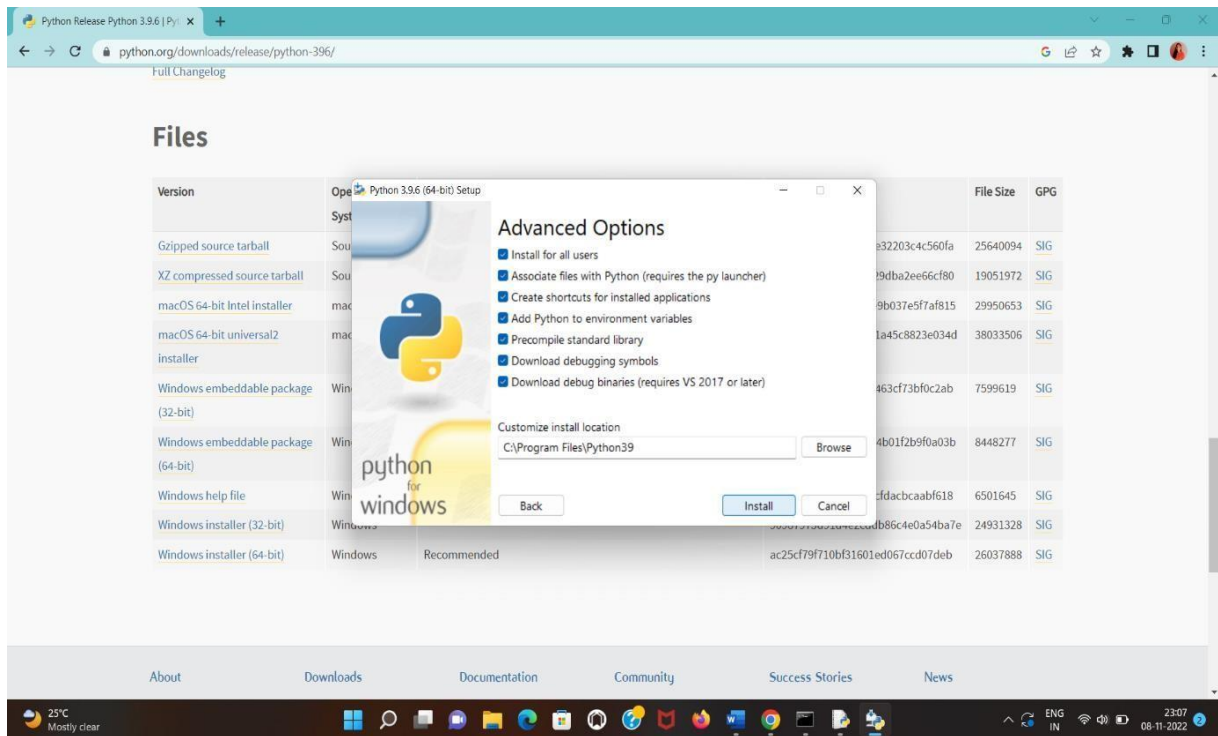
5. Install python 3.9.6 (64-bit) then click customize.



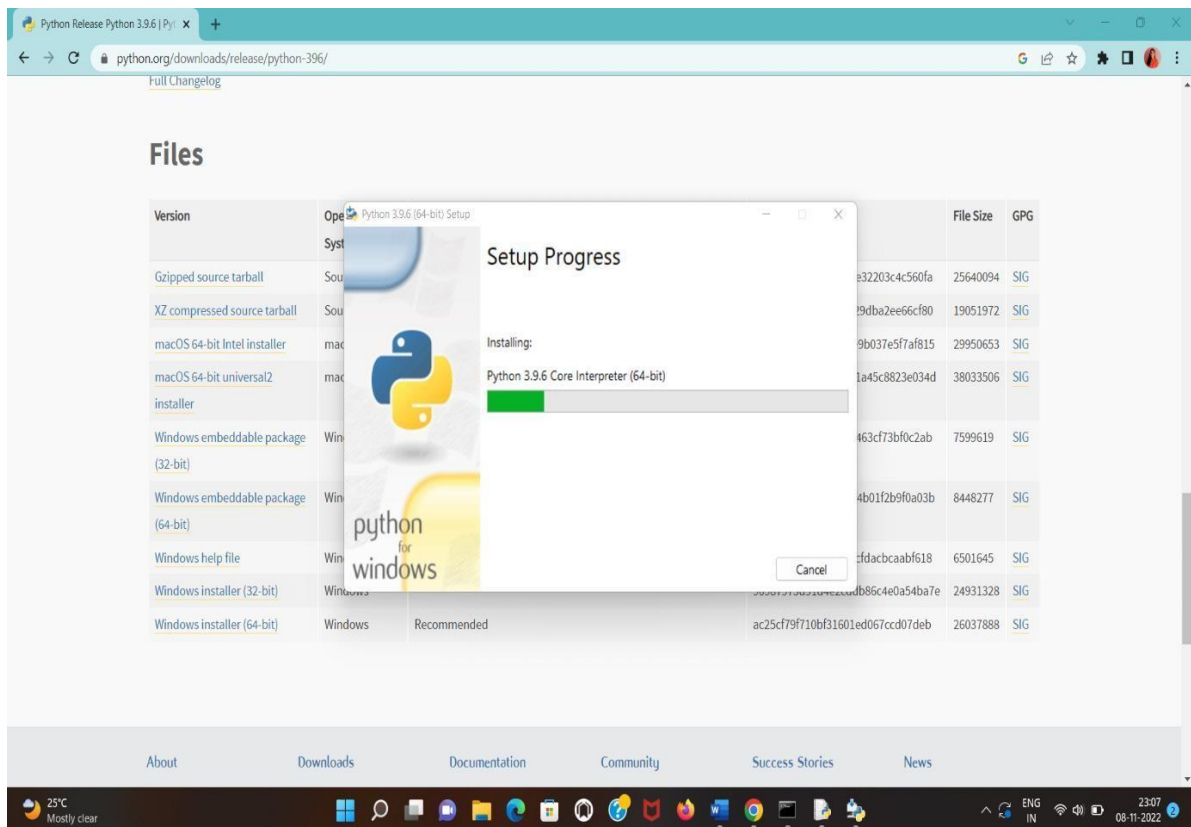
6. Click the next option.



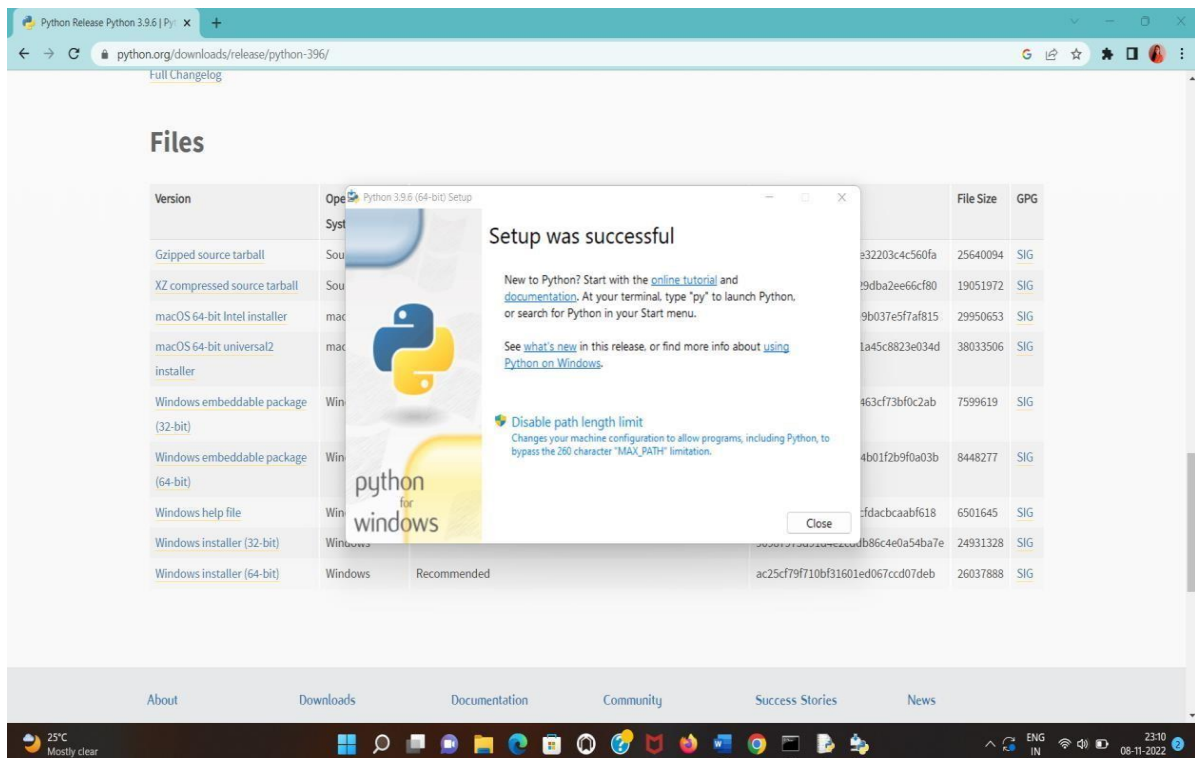
7. Select all the options and install the app.



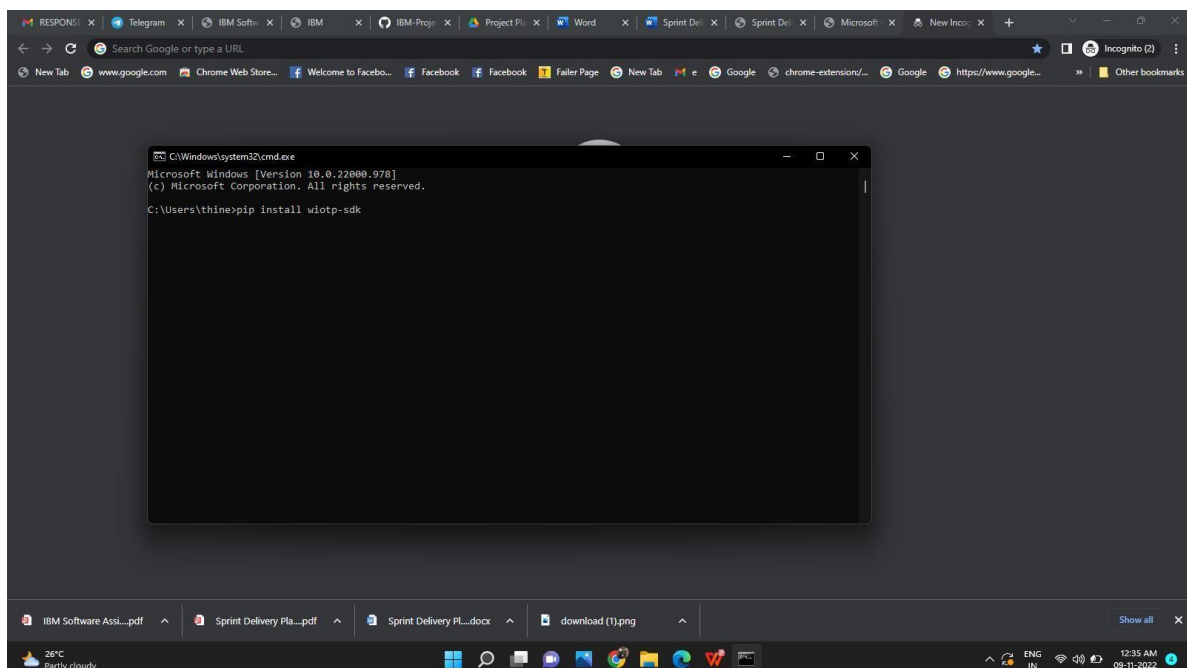
8. Set up process will begin after you give install.



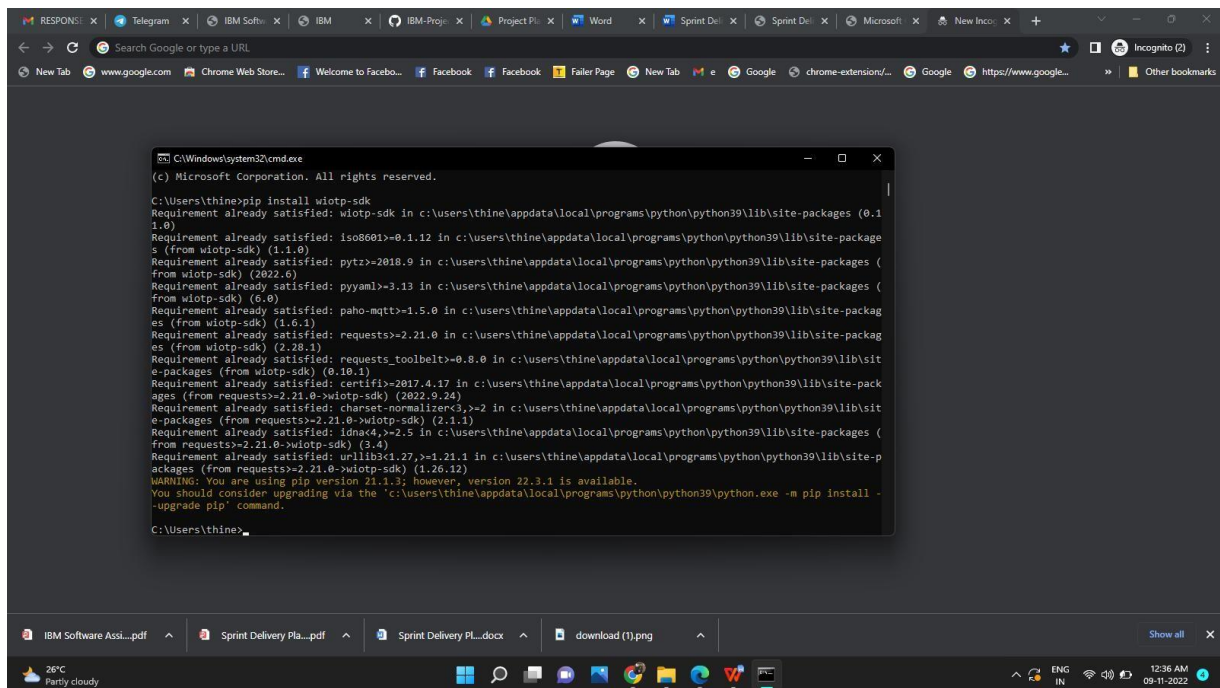
9. Python 3.9.6 version is installed successfully.



10. Now install the IBM Watson Platform package through command prompt.



11. The package will be installed.

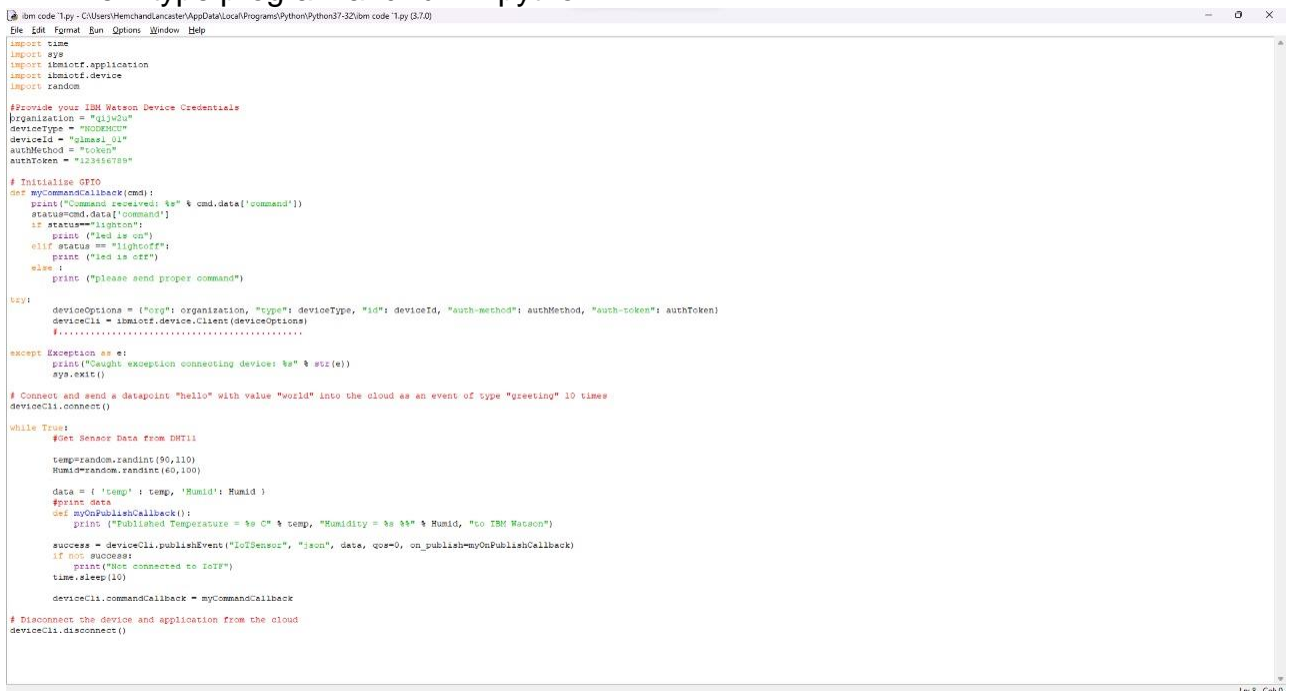


```
C:\Windows\system32\cmd.exe
(c) Microsoft Corporation. All rights reserved.

C:\Users\thine>pip install wiotp-sdk
Requirement already satisfied: wiotp-sdk in c:\users\thine\appdata\local\programs\python\python39\lib\site-packages (0.11.0)
Requirement already satisfied: iso8601>=0.1.12 in c:\users\thine\appdata\local\programs\python\python39\lib\site-packages (from wiotp-sdk) (1.1.0)
Requirement already satisfied: pytz>=2018.9 in c:\users\thine\appdata\local\programs\python\python39\lib\site-packages (from wiotp-sdk) (2022.6)
Requirement already satisfied: pyyaml>=3.13 in c:\users\thine\appdata\local\programs\python\python39\lib\site-packages (from wiotp-sdk) (6.0)
Requirement already satisfied: paho-mqtt>=1.5.0 in c:\users\thine\appdata\local\programs\python\python39\lib\site-packages (from wiotp-sdk) (0.10.1)
Requirement already satisfied: requests>=2.21.0 in c:\users\thine\appdata\local\programs\python\python39\lib\site-packages (from wiotp-sdk) (2.28.1)
Requirement already satisfied: requests-toolbelt>=0.8.0 in c:\users\thine\appdata\local\programs\python\python39\lib\site-packages (from wiotp-sdk) (0.10.1)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\thine\appdata\local\programs\python\python39\lib\site-packages (from requests>=2.21.0->wiotp-sdk) (2022.9.24)
Requirement already satisfied: charset-normalizer<3,>=2 in c:\users\thine\appdata\local\programs\python\python39\lib\site-packages (from requests>=2.21.0->wiotp-sdk) (2.1.1)
Requirement already satisfied: idna<4,>=2.5 in c:\users\thine\appdata\local\programs\python\python39\lib\site-packages (from requests>=2.21.0->wiotp-sdk) (3.4)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in c:\users\thine\appdata\local\programs\python\python39\lib\site-packages (from requests>=2.21.0->wiotp-sdk) (1.26.12)
WARNING: You are using pip version 21.1.3; however, version 22.3.1 is available.
You should consider upgrading via the 'c:\users\thine\appdata\local\programs\python\python39\python.exe -m pip install --upgrade pip' command.

C:\Users\thine>
```

12. Then type program and run in python.



```
ibm code 1.py - C:\Users\Hemchandra\OneDrive\OneDrive\Local\Programs\Python\Python37-32\ibm code 1.py (3.7.0)
File Edit Format Run Options Window Help

import time
import sys
import random
import ibmiotf.application
import ibmiotf.device
import random

# Provide your IBM Watson Device Credentials
organisation = "org1234"
deviceType = "MyDevice"
deviceId = "device123"
authMethod = "token"
authToken = "123456789"

# Initialize GPIO
def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    statusCmd.data['command']
    if statusCmd.data['command'] == "led on":
        print("led is on")
    elif statusCmd.data['command'] == "led off":
        print("led is off")
    else:
        print("Please send proper command")

try:
    deviceOptions = {"org": organisation, "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(1)

# Connect and send a datapoint "hello" with value "world" into the cloud as an event of type "greeting" 10 times
deviceCli.connect()

while True:
    # Get Sensor Data from DHT11
    temp = random.randint(90, 110)
    humi = random.randint(60, 100)

    data = { 'temp': temp, 'Humid': Humid }
    # Print data
    def myOnPublishCallback():
        print("Published Temperature = %s C" % temp, "Humidity = %s" % humi, "to IBM Watson")

    success = deviceCli.publishEvent("IoTDevice", "json", data, qos=0, on_publish=myOnPublishCallback)
    if not success:
        print("Not connected to IoT")
        time.sleep(10)

    deviceCli.commandCallback = myCommandCallback

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

RESULT:

The python version 3.9.6 and IBM Watson IoT platform package are installed successfully.

Python Code:

```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random

#Provide your IBM Watson Device Credentials
organization = "qijw2u"
deviceType = "NODEMCU"
deviceId = "glmas1_01"
authMethod = "token"
authToken = "123456789"

# Initialize GPIO
def myCommandCallback(cmd):
    print("Command received: %s" % cmd.data['command'])
    status=cmd.data['command']
    if status=="lighton":
        print ("led is on")
    elif status == "lightoff":
        print ("led is off")
    else :
        print ("please send proper command")

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:
    #Get Sensor Data from DHT11

    temp=random.randint(90,110)
    Humid=random.randint(60,100)

    data = { 'temp' : temp, 'Humid': Humid }
    #print data
    def myOnPublishCallback():
        print ("Published Temperature = %s C" % temp, "Humidity = %s %" % Humid, "to IBM
Watson")

    success = deviceCli.publishEvent("IoTSensor", "json", data, qos=0,
on_publish=myOnPublishCallback)
    if not success:
        print("Not connected to IoT")
        time.sleep(10)
```

```
deviceCli.commandCallback = myCommandCallback
```

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

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Command executed: myCommand
led is off
Published Temperature = 105 C Humidity = 85 % to IBM Watson
Published Temperature = 100 C Humidity = 92 % to IBM Watson
Command received: lightsoff
led is off
Published Temperature = 101 C Humidity = 92 % to IBM Watson
Command received: lighton
led is on
Published Temperature = 92 C Humidity = 100 % to IBM Watson
Published Temperature = 97 C Humidity = 74 % to IBM Watson
Command received: lighton
led is on
Published Temperature = 93 C Humidity = 77 % to IBM Watson
Published Temperature = 97 C Humidity = 88 % to IBM Watson
Published Temperature = 95 C Humidity = 79 % to IBM Watson
Published Temperature = 91 C Humidity = 66 % to IBM Watson
Published Temperature = 105 C Humidity = 88 % to IBM Watson
Command received: lighton
led is on
Published Temperature = 93 C Humidity = 80 % to IBM Watson
Published Temperature = 92 C Humidity = 72 % to IBM Watson
Command received: lighton
led is on
Published Temperature = 90 C Humidity = 100 % to IBM Watson
Command received: lighton
led is on
Published Temperature = 92 C Humidity = 74 % to IBM Watson
Published Temperature = 99 C Humidity = 88 % to IBM Watson
Published Temperature = 108 C Humidity = 80 % to IBM Watson
Published Temperature = 97 C Humidity = 95 % to IBM Watson
Published Temperature = 99 C Humidity = 75 % to IBM Watson
Published Temperature = 99 C Humidity = 93 % to IBM Watson
Published Temperature = 102 C Humidity = 99 % to IBM Watson
Published Temperature = 104 C Humidity = 69 % to IBM Watson
Published Temperature = 108 C Humidity = 88 % to IBM Watson
Published Temperature = 96 C Humidity = 76 % to IBM Watson
Published Temperature = 103 C Humidity = 83 % to IBM Watson
Published Temperature = 90 C Humidity = 97 % to IBM Watson
Published Temperature = 91 C Humidity = 93 % to IBM Watson
Published Temperature = 102 C Humidity = 75 % to IBM Watson
Published Temperature = 93 C Humidity = 65 % to IBM Watson
Published Temperature = 100 C Humidity = 62 % to IBM Watson
Published Temperature = 94 C Humidity = 60 % to IBM Watson
Published Temperature = 103 C Humidity = 79 % to IBM Watson
Published Temperature = 105 C Humidity = 96 % to IBM Watson
Published Temperature = 94 C Humidity = 60 % to IBM Watson
Published Temperature = 93 C Humidity = 67 % to IBM Watson
Published Temperature = 104 C Humidity = 79 % to IBM Watson
Published Temperature = 100 C Humidity = 71 % to IBM Watson
Published Temperature = 93 C Humidity = 95 % to IBM Watson
Published Temperature = 104 C Humidity = 62 % to IBM Watson
Published Temperature = 104 C Humidity = 84 % to IBM Watson
Published Temperature = 92 C Humidity = 80 % to IBM Watson
Published Temperature = 105 C Humidity = 71 % to IBM Watson
Published Temperature = 108 C Humidity = 68 % to IBM Watson
Published Temperature = 92 C Humidity = 89 % to IBM Watson
Published Temperature = 107 C Humidity = 74 % to IBM Watson
Published Temperature = 97 C Humidity = 74 % to IBM Watson
Published Temperature = 96 C Humidity = 64 % to IBM Watson
Ln: 151 Col: 9
```

IBM Watson IoT Platform

813819106030@smarterintmz.com
ID: qjw7u

Browse Action Device Types Interfaces

Q Search by Device ID

Add Device

Device Simulator

| Device ID | Status | Device Type | Class ID | Date Added | Descriptive Location | Added By | Device Class |
|-----------|-----------|-------------|----------|---------------------|----------------------|-------------------------------|--------------|
| gimac1_01 | Connected | NODEMCU | Device | 18 Nov 2022 8:57 PM | | 813819106030@smarterintmz.com | |

Identity Device Information Recent Events State Logs

The recent events listed show the live stream of data that is coming and going from this device.

| Event | Value | Format | Last Received |
|-----------|-------------------------|--------|-------------------|
| IoTSensor | ["temp":107,"Humid":71] | json | a few seconds ago |
| IoTSensor | ["temp":106,"Humid":95] | json | a few seconds ago |
| IoTSensor | ["temp":105,"Humid":94] | json | a few seconds ago |
| IoTSensor | ["temp":97,"Humid":94] | json | a few seconds ago |
| IoTSensor | ["temp":110,"Humid":68] | json | a few seconds ago |

Items per page: 50 | 1-1 of 1 item

1 of 1 page