

Sprint-3

Date	8 November 2022
Team ID	PNT2022TMID37013
Project name	Real-Time River Water Quality Monitoring and Control System

Python Code:

#importing Random function to generate the value

import random as rand

for i in range(5):

 print("Test case:",i+1)

 print("Welcome to Real-Time River Water Quality Monitoring and Control System")

 temperature = int(rand.randint(-40,125))

 pH = int(rand.randint(0,14))

 DO = int(rand.randint(0,100))

 TSS = int(rand.randint(0,3700))

 Manganese = int(rand.randint(0,1000))

 Copper = int(rand.randint(0,2000))

 ammonia_Nitrate = int(rand.randint(0,100))

 Hardness = int(rand.randint(0,1000))

 Zinc = int(rand.randint(0,100))

 Conductivity = f"{float(rand.uniform(0.001,2000)):.2f}"

 Chloride = int(rand.randint(0,200))

 Sulphate = int(rand.randint(0,1000))

 #These variables store value of random data to be shared to the cloud

 #printing the values

```

print( "Temperature:", temperature,

      "\npH:", pH,

      "\nDO:", DO,

      "\nTSS:", TSS,

      "\nManganese:", Manganese,

      "\nCopper:", Copper,

      "\nAmmonia & Nitrate:", ammonia_Nitrate,

      "\nHardness:", Hardness,

      "\nZinc:", Zinc,

      "\nConductivity:", Conductivity,

      "\nChloride:", Chloride,

      "\nSulphate:", Sulphate, "\n" )

```

The screenshot shows a Python IDE window titled "python3.py - C:\Users\WQ\AppData\Local\Programs\Python\Python37\python.exe python3.py C:\Users\WQ\AppData\Local\Programs\Python\Python37\python.exe". The code in the editor is as follows:

```

import random as rand
from random import randint

print("Test case:", id)
print("Welcome to Real-Time River Water Quality Monitoring and Control System")
temperature = randint(40, 120)
pH = randint(6, 14)
DO = randint(0, 10)
TSS = randint(0, 3000)
Manganese = randint(0, 1000)
Copper = randint(0, 2000)
ammonia_Nitrate = randint(0, 100)
Hardness = randint(0, 1000)
Zinc = randint(0, 100)
Conductivity = 3 * (rand.random() * 200 + 10)
Chloride = randint(0, 200)
Sulphate = randint(0, 1000)

#These variables store value of random data to be stored to the cloud
#Printing the values
print("Temperature:", temperature,

      "\npH:", pH,

      "\nDO:", DO,

      "\nTSS:", TSS,

      "\nManganese:", Manganese,

      "\nCopper:", Copper,

      "\nAmmonia & Nitrate:", ammonia_Nitrate,

      "\nHardness:", Hardness,

      "\nZinc:", Zinc,

      "\nConductivity:", Conductivity,

      "\nChloride:", Chloride,

      "\nSulphate:", Sulphate, "\n" )

```

The IDE output shows the execution of the script, with the following output:

```

Test case: 1
Welcome to Real-Time River Water Quality Monitoring and Control System
Temperature: 100
pH: 10
DO: 5
TSS: 1000
Manganese: 500
Copper: 1000
ammonia_Nitrate: 50
Hardness: 500
Zinc: 50
Conductivity: 300
Chloride: 100
Sulphate: 500

```

Output:

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Conductivity: 404.28
Chloride: 83
Sulphate: 248

Test case: 3
Welcome to Real-Time River Water Quality Monitoring and Control System
Temperature: 123
pH: 0
DO: 13
TSS: 1210
Manganese: 209
Copper: 1660
Ammonia & Nitrate: 80
Hardness: 118
SiO2: 15
Conductivity: 764.77
Chloride: 258
Sulphate: 715

Test case: 4
Welcome to Real-Time River Water Quality Monitoring and Control System
Temperature: -10
pH: 1
DO: 74
TSS: 124
Manganese: 274
Copper: 929
Ammonia & Nitrate: 82
Hardness: 372
SiO2: 22
Conductivity: 224.14
Chloride: 26
Sulphate: 248

Test case: 5
Welcome to Real-Time River Water Quality Monitoring and Control System
Temperature: 31
pH: 5
DO: 43
TSS: 2884
Manganese: 88
Copper: 812
Ammonia & Nitrate: 81
Hardness: 474
SiO2: 6
Conductivity: 374.34
Chloride: 29
Sulphate: 304

>>>
```

```
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (tags/v3.7.0:01bf8f209, Jan 27 2019, 04:08:51) [AMD64 v.1014 64 bit (ARM64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
RESTART: C:\Users\AK\AppData\Local\Programs\Python\Python37\python.exe python spring.py
Test case: 1
Welcome to Real-Time River Water Quality Monitoring and Control System
Temperature: 85
pH: 8
DO: 9
TSS: 912
Manganese: 124
Copper: 1917
Ammonia & Nitrate: 67
Hardness: 954
SiO2: 45
Conductivity: 1893.93
Chloride: 290
Sulphate: 130

Test case: 2
Welcome to Real-Time River Water Quality Monitoring and Control System
Temperature: -1
pH: 0
DO: 77
TSS: 2217
Manganese: 211
Copper: 827
Ammonia & Nitrate: 23
Hardness: 699
SiO2: 26
Conductivity: 1922.80
Chloride: 201
Sulphate: 850

Test case: 3
Welcome to Real-Time River Water Quality Monitoring and Control System
Temperature: 123
pH: 10
DO: 81
TSS: 1782
Manganese: 349
Copper: 1871
Ammonia & Nitrate: 41
Hardness: 818
SiO2: 4
Conductivity: 340.40
Chloride: 130
Sulphate: 620

Test case: 4
```