Marwadi University Marwadi Chandarana Group NAAC A+	**Marwadi University** **Faculty of Engineering & Technology** **Department of Information and Communication Technology**	
Subject: Programming With Python (01CT1309)	**Aim:** Python Serial Port Communication Between PC and Arduino Using the PySerial Library	
Experiment 25	**Date:**	**Enrollment No: 92400133055**

Aim: Python Serial Port Communication Between PC and Arduino Using the PySerial Library

Arduino Code:

```
int x;
    void setup()
      { Serial.begin(115200);
      Serial.setTimeout(1);
      pinMode(2,OUTPUT);
    }
void  loop() {
      while (!Serial.available());
      x = Serial.readString().toInt();
      Serial.print(x + 1);
    }
```

Python Code:

```
import serial
import time
arduino = serial.Serial(port='COM3',  baudrate=115200, timeout=.1)


    def write_read(x):
       arduino.write(bytes(x, 'utf-8'))
       time.sleep(0.05)
       data = arduino.readline() return
       data


while True:
       num = input("Enter a number: ") value
       = write_read(num) print(value)
```

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Output:

D: > Ruhaan > Python > college > arduino.py > ...

```
1   import serial as se
2   import time as t
3   arduino=se.Serial(port='COM13',baudrate=9600,timeout=1)
4
5
6   while True:
7       cmd = input("Enter 1, 0 or q: ")
```

DEBUG CONSOLE TERMINAL PORTS

TERMINAL powershell

```
PS D:\Ruhaan\Python\college> python .\arduino.py
Enter 1, 0 or q: 1
1
Enter 1, 0 or q: 0
0
Enter 1, 0 or q: 1
1
Enter 1, 0 or q: 0
0
Enter 1, 0 or q: 0
0
Enter 1, 0 or q: 0
0
Enter 1, 0 or q: 0
0
Enter 1, 0 or q: 0
0
Enter 1, 0 or q: q
PS D:\Ruhaan\Python\college>
```

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Post Lab

Write a Python script to send a message from the PC to Arduino using PySerial.

Arduino code:

```
void setup() {
  Serial.begin(9600);
}

void loop() {
  while (!Serial.available());
  String data = Serial.readString();
  Serial.println(data);
}
```

Python Code :

```
import serial
import time

arduino = serial.Serial('COM13',baudrate=9600,timeout=1)
time.sleep(2)
while True:
    msg = input("Enter message: ")
    arduino.write(msg.encode())
    if msg == 'q':
        break
    time.sleep(0.1)
    message = arduino.readline().decode().strip()
    if message:
        print(message)
```

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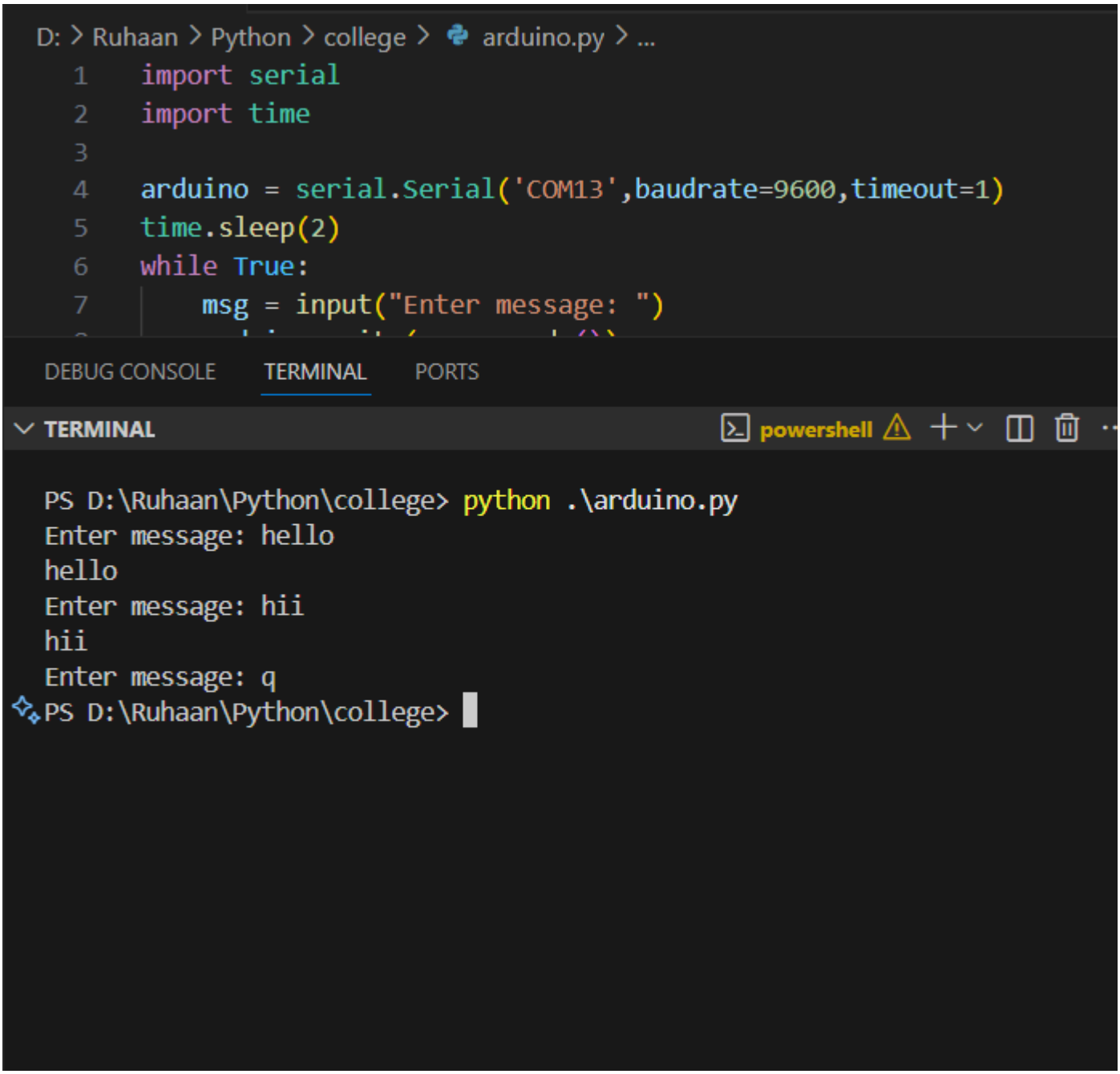

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As we cannot open the Serial Monitor in Arduino IDE and also in Python at the same time because only one program can use the COM port.

Therefore I have displayed it in Python code .