

Experiment No. 1.2

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Branch: **MCA - CCD**

Semester: **I**

Subject Name: **Python Programming Lab**

UID: **22MCC20039**

Section/Group: **MCD-1/ Grp B**

Date of Performance: **20th Sept 22**

Subject Code: **22CAH-645**

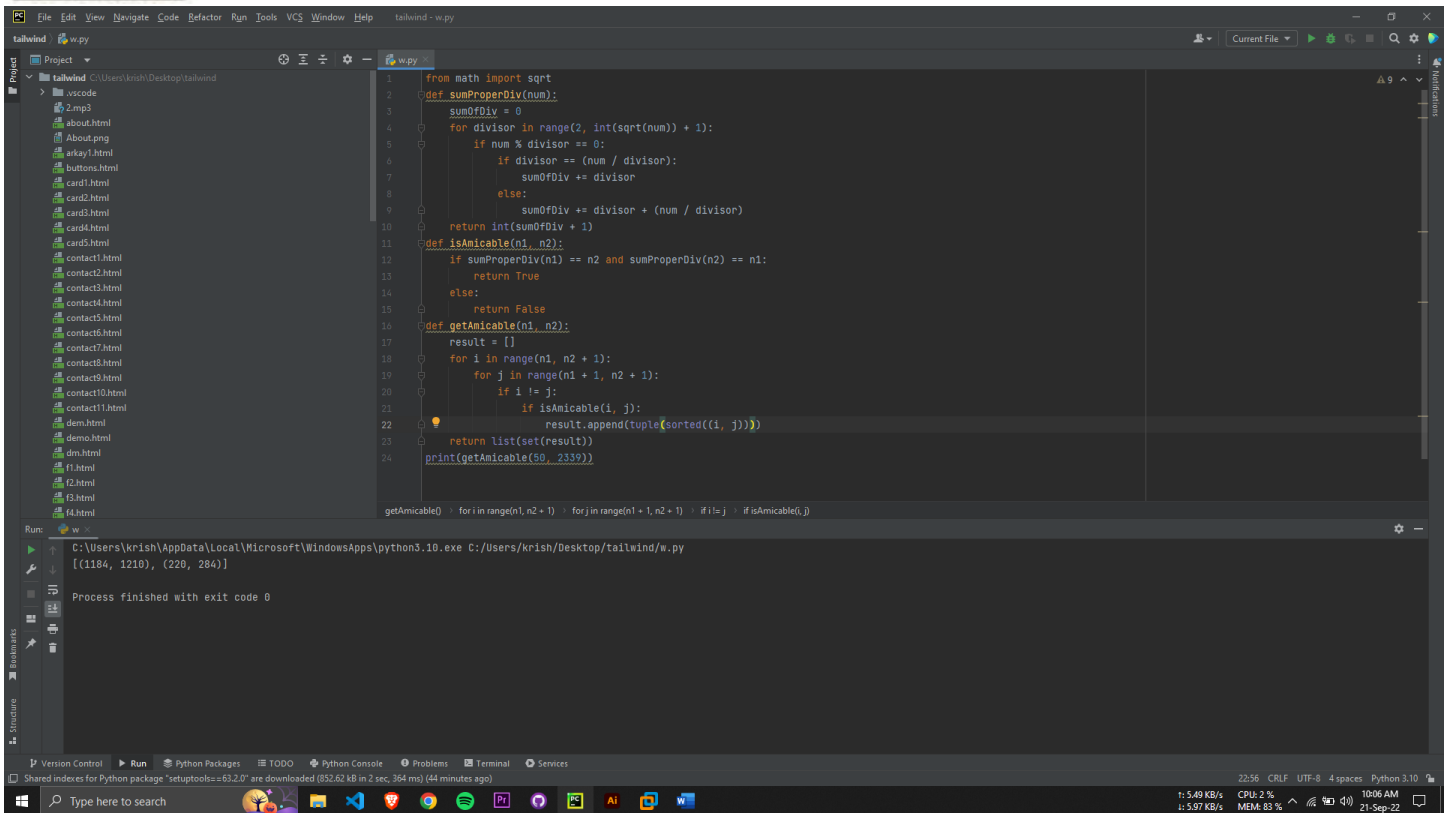
1. Task to be done:

Write a function to print pairs of amicable numbers in a range.

2. Code for experiment/practical:

```
from math import sqrt
def sumProperDiv(num):
    sumOfDiv = 0
    for divisor in range(2, int(sqrt(num)) + 1):
        if num % divisor == 0:
            if divisor == (num / divisor):
                sumOfDiv += divisor
            else:
                sumOfDiv += divisor + (num / divisor)
    return int(sumOfDiv + 1)
def isAmicable(n1, n2):
    if sumProperDiv(n1) == n2 and sumProperDiv(n2) == n1:
        return True
    else:
        return False
def getAmicable(n1, n2):
    result = []
    for i in range(n1, n2 + 1):
        for j in range(n1 + 1, n2 + 1):
            if i != j:
                if isAmicable(i, j):
                    result.append(tuple(sorted((i, j))))
    return list(set(result))
print(getAmicable(50, 2339))
```

3. Result/Output/Writing Summary:



```

1 from math import sqrt
2 def sumProperDiv(num):
3     sumOfDiv = 0
4     for divisor in range(2, int(sqrt(num)) + 1):
5         if num % divisor == 0:
6             if divisor == (num / divisor):
7                 sumOfDiv += divisor
8             else:
9                 sumOfDiv += divisor + (num / divisor)
10    return int(sumOfDiv + 1)
11 def isAmicable(n1, n2):
12     if sumProperDiv(n1) == n2 and sumProperDiv(n2) == n1:
13         return True
14     else:
15         return False
16 def getAmicable(n1, n2):
17     result = []
18     for i in range(n1, n2 + 1):
19         for j in range(n1 + 1, n2 + 1):
20             if i != j:
21                 if isAmicable(i, j):
22                     result.append(tuple(sorted((i, j))))
23     return list(set(result))
24 print(getAmicable(50, 2539))

```

Run: C:\Users\krish\AppData\Local\Microsoft\WindowsApps\python3.10.exe C:\Users\krish\Desktop\tailwind\w.py
[(1184, 1210), (220, 284)]
Process finished with exit code 0

Evaluation Grid:

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Demonstration and Performance		22
2.	Worksheet		8

***** THE END *****