

Experiment No. 1.1

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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:

A) To find twin prime numbers less than 1000.

B) To implement the permutations & combinations.

2. Code for experiment/practical:

A)

```
def checkPrime(max):
    for n in range(2, max):
        if max % n == 0:
            return False
    return True

def twinPrime(max):
    for i in range(2, max):
        j = i + 2

        if (checkPrime(i) and checkPrime(j)):
            print(" {0} and {1}".format(i, j))

print("Twin Primes are: ")
twinPrime(1000)

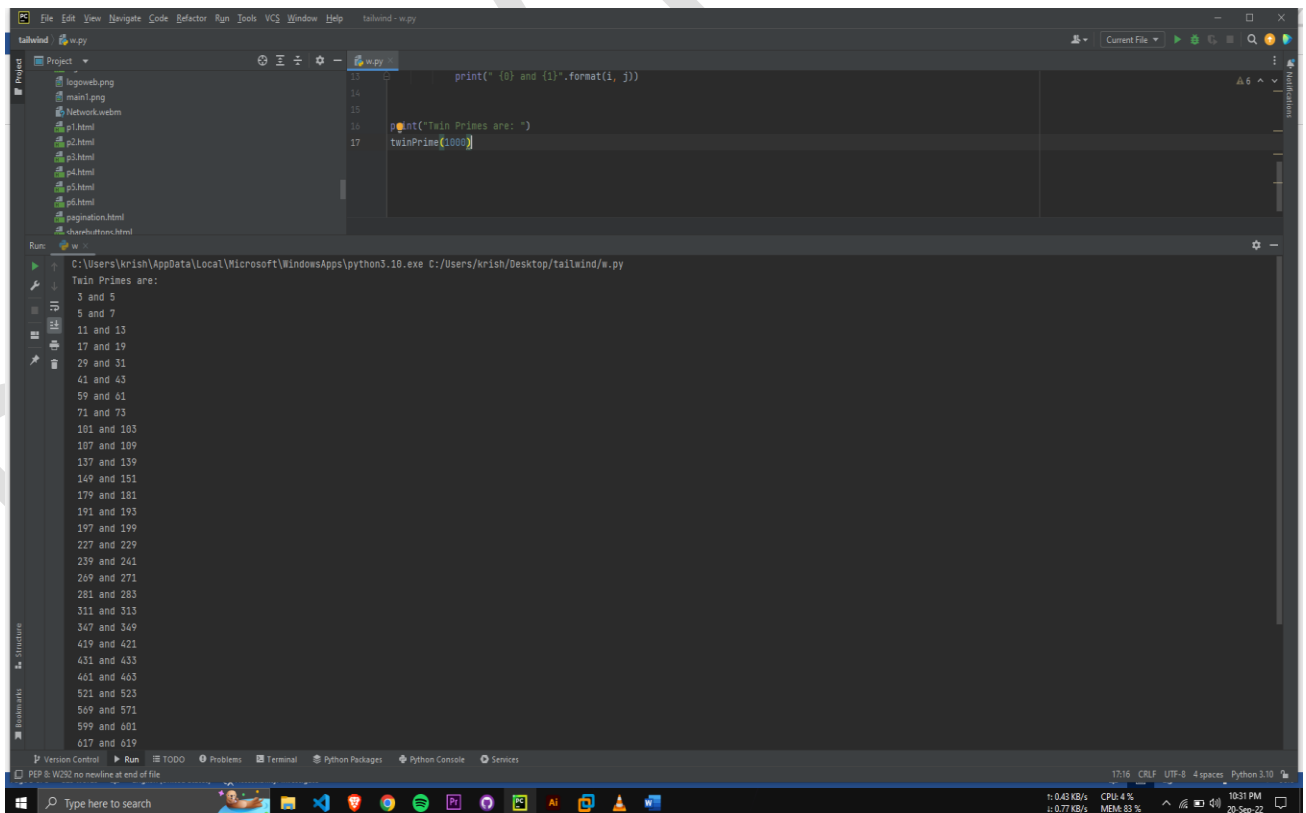
generate_twins(2, 1000)
```

B)

```
def fact(n):  
    if n == 1:  
        return n  
    return n * fact(n - 1)  
  
def permut(n, r):  
    return (fact(n) / fact(n - r))  
  
def combin(n, r):  
    return (fact(n) / (fact(r) * fact(n - r)))  
  
print("Permutation: ", permut(69, 4))  
print("Combination: ", combin(69, 4))
```

3. Result/Output/Writing Summary:

A)

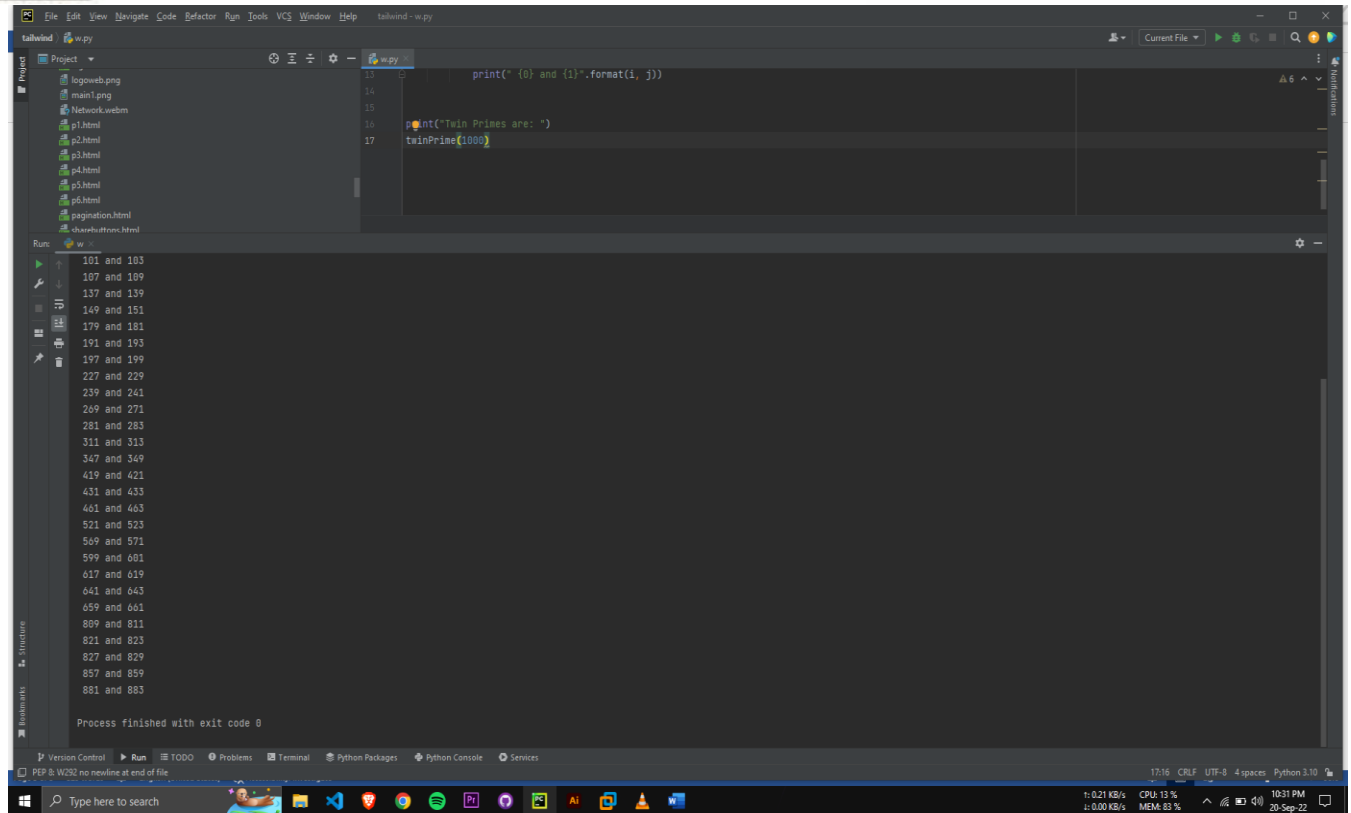


```
tailwind - w.py  
13  
14  
15  
16 print("Twin Primes are: ")  
17 twinPrime(1000)
```

Run: C:\Users\krish\AppData\Local\Microsoft\WindowsApps\python3.10.exe C:/Users/krish/Desktop/tailwind/w.py

Twin Primes are:
3 and 5
5 and 7
11 and 13
17 and 19
29 and 31
41 and 43
59 and 61
71 and 73
101 and 103
107 and 109
137 and 139
149 and 151
179 and 181
191 and 193
197 and 199
227 and 229
239 and 241
269 and 271
281 and 283
311 and 313
347 and 349
419 and 421
431 and 433
461 and 463
521 and 523
569 and 571
599 and 601
617 and 619

Taskbar: Type here to search | 10:31 PM | 20-Sep-22



```

13     print("{} and {}".format(i, j))
14
15
16     print("Twin Primes are: ")
17     twinPrime(1000)

```

Run console output:

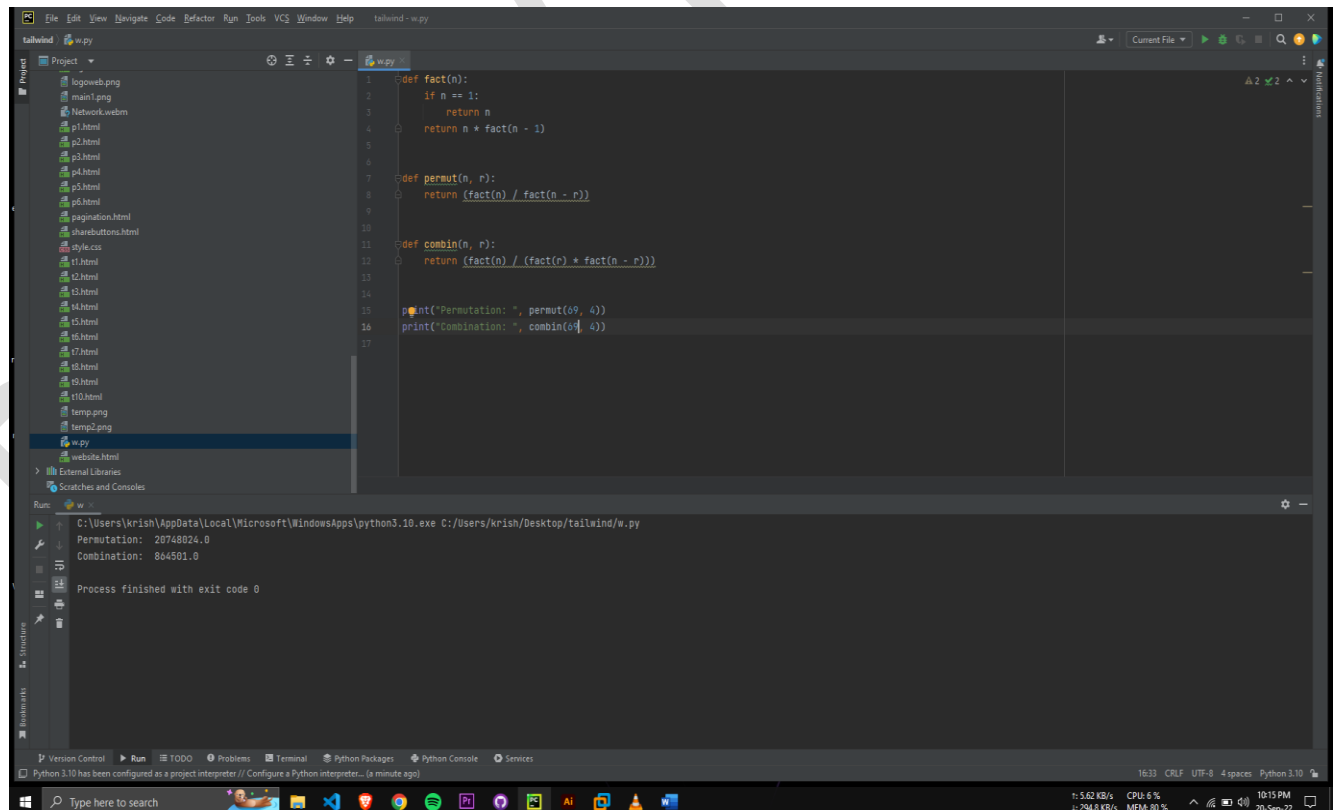
```

101 and 103
107 and 109
137 and 139
149 and 151
179 and 181
191 and 193
197 and 199
227 and 229
239 and 241
269 and 271
281 and 283
311 and 313
347 and 349
419 and 421
431 and 433
461 and 463
521 and 523
569 and 571
599 and 601
617 and 619
641 and 643
659 and 661
809 and 811
821 and 823
827 and 829
857 and 859
881 and 883

```

Process finished with exit code 0

B)



```

1 def fact(n):
2     if n == 1:
3         return n
4     return n * fact(n - 1)
5
6
7 def permut(n, r):
8     return (fact(n) / fact(n - r))
9
10
11 def combin(n, r):
12     return (fact(n) / (fact(r) * fact(n - r)))
13
14
15 print("Permutation: ", permut(6, 4))
16 print("Combination: ", combin(6, 4))
17

```

Run console output:

```

C:\Users\Krish\AppData\Local\Microsoft\WindowsApps\python3.10.exe C:/Users/Krish/Desktop/tailwind/w.py
Permutation: 20748024.0
Combination: 864501.0

```

Process finished with exit code 0

Learning outcomes (What I have learned):

1. Learned to implement the twin prime numbers algorithm in python3.
2. Learned to implement the formulae of permutations and combinations.

Evaluation Grid:

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

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