

**SCHOOL OF EXCELLENCE, SECTOR-17
ROHINI**



**COMPUTER SCIENCE : PYTHON
CLASS - XII-A**

**PRACTICAL FILE (TERM-1)
SESSION = “2021-22”**



**SUBMITTED BY : VINEET
ROLL NO : 22**

CERTIFICATE

**This is to certify that “VINEET” of class “12th A”
have successfully completed his experiments in the
subject of COMPUTER SCIENCE**

**As required according to the syllabus prescribed by the
Central Board of Secondary Education for the academic
C.S. Practical Examination Conducted by CBSE.**

Teacher's Signature

Principal's Signature

External Invigilator's Signature

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1. WAP to find the factorial of a number in python.

```
↳ 1. Factorial.py > ...
1  def fact(n):
2      f = 1
3      for i in range(1,n+1):
4          f = f * i
5      return f
6
7  x = int(input("Enter Your Number : "))
8  if x < 0:
9      print("You Have Entered Negative Value!!!")
10 else:
11     result = fact(x)
12     print(result)
13
14
15
```

```
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
1. Factorial.py"
Enter Your Number : 5
120
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
1. Factorial.py"
Enter Your Number : 10
3628800
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
1. Factorial.py"
Enter Your Number : -4
You Have Entered Negative Value!!!
Vinus-MacBook-Air:Practical1stTerm vinu$
```

2. WAP to check whether a number is Prime or not.

```
↳ 2. Check for Prime or not.py > ⚙ prime
1  def prime(n):
2      if n > 1:
3
4          for i in range(2, int(n/2)+1):
5              if (n % i) == 0:
6                  print(n, "is not a prime number")
7                  break
8              else:
9                  print(n, "is a prime number")
10
11     else:
12         print(n, "is not a prime number")
13
14 num = int(input("Enter You Number : "))
15 prime(num)
```

```
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
2. Check for Prime or not.py"
Enter You Number : 5
5 is a prime number
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
2. Check for Prime or not.py"
Enter You Number : 2
2 is a prime number
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
2. Check for Prime or not.py"
Enter You Number : 13732
13732 is not a prime number
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
2. Check for Prime or not.py"
Enter You Number : 773821
773821 is a prime number
```

3. WAP to find the nth term of fibonacci series.

```
3. nth Term of Fibonacci Series.py > ...
1  def fib(n):
2      if n<= 0:
3          print("Negative Number")
4      elif n == 1:
5          return 0
6      elif n == 2:
7          return 1
8      else:
9          return fib(n-1)+fib(n-2)
10
11 x = int(input("Enter Your Desired nth Term : "))
12 print(fib(x))
13
```

```
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
3. nth Term of Fibonacci Series.py"
Enter Your Desired nth Term : 5
3
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
3. nth Term of Fibonacci Series.py"
Enter Your Desired nth Term : 15
377
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
3. nth Term of Fibonacci Series.py"
Enter Your Desired nth Term : 22
10946
Vinus-MacBook-Air:Practical1stTerm vinu$
```

4. WAP to check whether a word is present in a sentence/string or not.

```
4. Check Word in Sentence.py > ...
4    for i in s:
5        if (i == b):
6            return True
7    return False
8
9
10   s = input("Enter Your Sentence : ")
11   word = input("Enter Your Word(to be checked) : ")
12
13   if (word in sentence(s, word)):
14       print(word , "is Present in Your Sentence!!!")
15   else:
16       print("No, Your Word is Not Present in Your Sentence.")
17
```

```
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
4. Check Word in Sentence.py"
Enter Your Sentence : Hii I am Python Programmer.
Enter Your Word(to be checked) : Python
Python is Present in Your Sentence!!!
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
4. Check Word in Sentence.py"
Enter Your Sentence : Hii I am Python Programmer.
Enter Your Word(to be checked) : python
No, Your Word is Not Present in Your Sentence.
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
4. Check Word in Sentence.py"
Enter Your Sentence : Hii I am Python Programmer.
Enter Your Word(to be checked) : I am
No, Your Word is Not Present in Your Sentence.
Vinus-MacBook-Air:Practical1stTerm vinu$ █
```

5. WAP to give the sum of every element of a list.

```
5. sum of element of list.py > ...
1  def sumoflist(list):
2      sum = 0
3      for i in list:
4          sum += i
5      return sum
6
7  list = list(eval(input("Enter Your List : ")))
8  sum = sumoflist(list)
9  print("Sum of Your Numbers is ",sum)
10
```

```
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
5. sum of element of list.py"
Enter Your List : 5,4,3,2,3,4,5,3,2,2,4,5,6,7,4,3,2,2,4
Sum of Your Numbers is 70
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
5. sum of element of list.py"
Enter Your List : 23,32,23,45,65,13
Sum of Your Numbers is 201
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
5. sum of element of list.py"
Enter Your List : 83,-83
Sum of Your Numbers is 0
Vinus-MacBook-Air:Practical1stTerm vinu$ █
```

6. Write a program that receive two numbers in a function as returns the results of all arithmetic operations (+, -, *, /, %).

```
6. all mathematical operations.py > ...
1  def calc(x,y):
2      return x+y, x-y, x*y, x/y, x//y, x**y, x%y
3
4  num1 = int(input("Enter Your first number : "))
5  num2 = int(input("Enter Your second number : "))
6  sum, minus, mult, div, fdiv, power, mod = calc(num1,num2)
7  print("Sum of Your Numbers : ",sum)
8  print("Subtraction of Your Numbers : ",minus)
9  print("Multiplication of Your Numbers : ",mult)
10 print("Division of Your Numbers : ",div)
11 print("Floor Division of Your Numbers : ",fdiv)
12 print(num1, "Raise to Power ",num2," : ",power)
13 print("Remainder of Your Numbers : ",mod)
```

```
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
6. all mathematical operations.py"
Enter Your first number : 45
Enter Your second number : 6
Sum of Your Numbers : 51
Subtraction of Your Numbers : 39
Multiplication of Your Numbers : 270
Division of Your Numbers : 7.5
Floor Division of Your Numbers : 7
45 Raise to Power 6 : 8303765625
Remainder of Your Numbers : 3
Vinus-MacBook-Air:Practical1stTerm vinu$
```

7. Write a program to Calculate simple interest using function and default value of time =2 year and rate = 10% .

```
▶ 7. simple interest.py > ...
1  def simp(prin, time=2, rate=0.10):
2      return prin * time * rate
3
4  prin = float(input("Enter Your Principal Amount : "))
5  time = float(input("Enter Your Time Period(in yrs) : "))
6  rate = float(input("Enter Your Rate of Interest : "))
7  newRate = rate/100
8  si = simp(prin, time, newRate)
9  print("Your Simple Interest : ",si)
```

```
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
7. simple interest.py"
Enter Your Principal Amount : 74930
Enter Your Time Period(in yrs) : 34
Enter Your Rate of Interest : 12
Your Simple Interest : 305714.39999999997
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
7. simple interest.py"
Enter Your Principal Amount : 10000
Enter Your Time Period(in yrs) : 5
Enter Your Rate of Interest : 5
Your Simple Interest : 2500.0
Vinus-MacBook-Air:Practical1stTerm vinu$ █
```

8. Write a program that add '#' to the end of every word in a file.

```
8. Separated by # (txt file).py > ...
1  file = open("test.txt", 'r')
2  listoflines = file.readlines()
3  for i in listoflines:
4      line = i.split(" ")
5      for j in range(len(line)-1):
6          print(line[j], end="#")
7      print()
8
9  file.close()
```

```
1Hi#Every#One#This#is#a#Test#2Hi#Every#One#This#is#a#Test#3Hi#Every#One#This#is##Test#4Hi#Every#One#This#is#a#
Test#5Hi#Every#One#This#is##Test#Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/
8. Separated by # (txt file).py"
1Hi#Every#One#This#is#a#Test#
2Hi#Every#One#This#is#a#Test#
3Hi#Every#One#This#is##Test#
4Hi#Every#One#This#is#a#Test#
5Hi#Every#One#This#is##Test#
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
8. Separated by # (txt file).py"
1Hi#Every#One#This#is#a#Test#
2Hi#Every#One#This#is#a#Test#
3Hi#Every#One#This#is##Test#
4Hi#Every#One#This#is#a#Test#
5Hi#Every#One#This#is##Test#
Vinus-MacBook-Air:Practical1stTerm vinu$ []
```

9. Write a program that reads a file and counts vowels, consonants, uppercase and lowercase.

```
9. number of vowel, consonant, lowercase.py > ...
1
2     file = open("test.txt",'r')
3     line = " "
4     vowels = 0
5     conso = 0
6     upper = 0
7     lower = 0
8     while line:
9         line = file.read(1)
10        if line in ['a','A','e','E','i','I','o','O','u','U']:
11            vowels+=1
12            if line.isupper():
13                upper+=1
14            elif line.islower():
15                lower+= 1
16            elif line.isupper():
17                upper+=1
18                conso+=1
19            elif line.islower():
20                lower+= 1
21                conso+=1
22        print("Number of Vowels : ",vowels)
23        print("Number of Consonants : ",conso)
24        print("Number of Uppercase Letters : ",upper)
25        print("Number of Lowercase Letters : ",lower)
26
```

```
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
9. number of vowel, consonant, lowercase.py"
Number of Vowels : 53
Number of Consonants : 70
Number of Uppercase Letters : 30
Number of Lowercase Letters : 93
Vinus-MacBook-Air:Practical1stTerm vinu$ █
```

10. WAP to Remove all the lines that contain the character 'a' in a file and write it to another file.

```
10. remove 'a' and write in file.py > ...
1   f = open("test.txt",'r')
2   g = open("text2.txt",'w')
3   str = " "
4   listoflines = f.readlines()
5   for list in listoflines:
6       curlist = list.split()
7       if "a" in curlist:
8           pass
9       else:
10          g.write(list)
11
12 f.close()
13 g.close()
14
15
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
10. remove 'a' and write in file.py"
Vinus-MacBook-Air:Practical1stTerm vinu$
```

≡ test.txt

```
1  1Hi Every One This is a Test File.
2  2Hi Every One This is a Test File.
3  3Hi Every One This is Test File.
4  4Hi Every One This is a Test File.
5  5Hi Every One This is Test File.
```

≡ text2.txt

```
1  3Hi Every One This is Test File.
2  5Hi Every One This is Test File.
```

11. Write a program to print the first 4 terms of an AP using a function.

```
11. Generates 4 Terms of AP.py > ...
1   def AP(a,d):
2       a2 = a + d
3       a3 = a + 2*d
4       a4 = a + 3*d
5       a5 = a + 4*d
6       print("")
7       print("Terms Of AP : ",a, a2, a3, a4, a5)
8
9
10  a = int(input("Enter Initial Number of AP : "))
11  d = int(input("Enter Common Difference of AP : "))
12
13  AP(a,d)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
Vinus-MacBook-Air:Practical1stTerm vinu$ /usr/local/bin/python3 "/Users/vinu/PycharmProjects/Practical1stTerm/
11. Generates 4 Terms of AP.py"
Enter Initial Number of AP : 53
Enter Common Difference of AP : 12

Terms Of AP : 53 65 77 89 101
Vinus-MacBook-Air:Practical1stTerm vinu$ █
```

EVERY PROGRAM IS AVAILABLE ON GITHUB

Name - Vineet

Class - 12th A

Session - 2021-21

Roll Number - 12122

Teacher's Name - Neha Dagar Ma'am



~~~~~.....THANK YOU.....~~~~~