

TASK 6

1. Python Program to Find Factorial of Number Using Recursion.

PROGRAM

```
pgm4.py > ...
1 def recursive_fact(n):
2     if n==1:
3         return n
4     else:
5         return n*recursive_fact(n-1)
6 num=int(input("enter number:"))
7 if num<0:
8     print("factorial not defined")
9 elif num==0:
10    print("factorial is 1")
11 else:
12    print("factorial is",recursive_fact(num))
13
```

OUTPUT

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [ ] [X]
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/task/pgm4.py
enter number:5
factorial is 120
PS C:\Users\Admin\Desktop\task> [ ]
```

2. Python program to check if the given number is a Disarium Number.

PROGRAM

```
pgm5.py > ...
1 num=int(input("enter number:"))
2 original=num
3 sum=0
4 while(num!=0):
5     digit=num%10
6     sum=sum+digit
7     num=num//10
8 if original%sum==0:
9     print("harshad number")
10 else:
11    print("not harshad")
12
```

OUTPUT

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [ ] [X] ...
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/task/pgm5.py
enter number:80
harshad number
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/task/pgm5.py
enter number:25
not harshad
PS C:\Users\Admin\Desktop\task> [ ]
```

3. Python program to determine whether the given number is a Harshad Number.

```
pgm6.py > ...
1 num=input("enter number:")
2 digit_count=len(num)
3 num=int(num)
4 sum=0
5 original=num
6 while(num!=0):
7     digit=num%10
8     exp=digit**digit_count
9     sum+=exp
10    num=num//10
11    digit_count-=1
12    print("disarium num" if original==sum else "not disarium num")
```

OUTPUT

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
sktop/task/pgm6.py
enter number:135
disarium num
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/De
sktop/task/pgm6.py
enter number:27
not disarium num
PS C:\Users\Admin\Desktop\task> |
```

4. Python program to check the number of digits present in an integer.

PROGRAM

```
pgm7.py > ...
1 num=(input("enter number:"))
2 length=len(num)
3 print(length)
```

OUTPUT

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admi
sktop/task/pgm7.py
enter number:789
3
PS C:\Users\Admin\Desktop\task> |
```

5. How to count the number of upper and lowercase letters in a string.

PROGRAM

```
pgm8.py > ...
1  text="LuminarTechnolab"
2  upper_case=0
3  lower_case=0
4  for ch in text:
5      if ch.islower():
6          lower_case+=1
7      else:
8          upper_case+=1
9  print("Total no.of lowercase:",lower_case)
10 print("Total no.of uppercase:",upper_case)
```

OUTPUT

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
Python + v [icon] [icon]
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/task/pgm8.py
Total no.of lowercase: 14
Total no.of uppercase: 2
PS C:\Users\Admin\Desktop\task>
```

6. Write a program to count words in string.

PROGRAM

```
pgm9.py > ...
1  words="luminar"
2  wc={w:words.count(w) for w in set(words)}
3  print(wc)
4
```

OUTPUT

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
Python + v [icon] [icon] ...
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/task/pgm9.py
{'a': 1, 'n': 1, 'r': 1, 'l': 1, 'i': 1, 'm': 1, 'u': 1}
PS C:\Users\Admin\Desktop\task> [icon]
```

7. Write the program to find the lists consist of at least one common element.

PROGRAM

```
pgm10.py > ...
1  arr1=[1,2,3,4,5]
2  arr2=[5,6,7,8]
3  for num in arr2:
4      if num in arr1:
5          result=True
6          print(result)
7          break
8  else:
9      result=False
10 print(result)
```

OUTPUT

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
Python + v [
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/
sktop/task/pgm10.py
True
PS C:\Users\Admin\Desktop\task>
```

8. Python program to print the duplicate elements of an array.

PROGRAM

```
pgm11.py > ...
1  arr=[2,4,6,8,8,8]
2  wc={i:arr.count(i) for i in set(arr)}
3  for k,v in wc.items():
4      if v>1:
5          print(k)
```

OUTPUT

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
Python + v [
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python
sktop/task/pgm11.py
8
PS C:\Users\Admin\Desktop\task>
```

9. Python program to print the elements of an array present on even position.

PROGRAM

```
pgm12.py > ...
1 string="python"
2 even=[]
3
4 for i in string:
5     if string.index(i)%2==0:
6         even.append(i)
7 print("even index :",even)
```

OUTPUT

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + -

```
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/A
sktop/task/pgm12.py
even index : ['p', 't', 'o']
PS C:\Users\Admin\Desktop\task>
```

10. Python program to print the elements of an array present on odd position.

PROGRAM

```
pgm13.py > ...
1 string="python"
2 odd=[]
3
4 for i in string:
5     if string.index(i)%2!=0:
6         odd.append(i)
7 print("odd index :",odd)
```

OUTPUT

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + -

```
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/A
sktop/task/pgm13.py
odd index : ['y', 'h', 'n']
PS C:\Users\Admin\Desktop\task>
```

11. Python program to print the largest element in an array.

PROGRAM

```
pgm14.py > ...
1 arr=[2,4,6,8]
2 largest=arr[0]
3 for i in range(0,len(arr)):
4     if arr[i]>largest:
5         largest=arr[i]
6 print(largest)
7
```

OUTPUT

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [ ] [X]
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/skstop/task/pgm14.py
8
PS C:\Users\Admin\Desktop\task>
```

12. Python program to print the smallest element in an array.

PROGRAM

```
pgm14.py x pgm4.py
pgm14.py > ...
1 arr=[2,4,6,8]
2 smallest=arr[0]
3 for i in range(0,len(arr)):
4     if arr[i]<smallest:
5         smallest=arr[i]
6 print(smallest)
```

OUTPUT

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [ ] [X]
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/skstop/task/pgm14.py
2
PS C:\Users\Admin\Desktop\task>
```

13. Python program to print the number of elements present in an array.

PROGRAM

```
pgm16.py > ...
1 arr=[2,4,6,8]
2 for i in arr:
3     print(i)
```

OUTPUT

```
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/task/pgm16.py
2
4
6
8
PS C:\Users\Admin\Desktop\task>
```

14. Python program to print the sum of all elements in an array.

PROGRAM

```
pgm17.py > ...
1  arr=[2,4,6,8]
2  sum=0
3  for i in arr:
4      sum+=i
5  print(sum)
```

OUTPUT

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
Python + - [ ] [ ] ...
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/task/pgm17.py
20
PS C:\Users\Admin\Desktop\task>
```

15. Python Program to Find Armstrong Number in an Interval.

PROGRAM

```
pgm18.py > ...
1  lower=int(input("enter lower limit:"))
2  upper=int(input("enter upper limit:"))
3  |
4  for num in range(lower,upper+1):
5      digit_count=len(str(num))
6      sum=0
7      original= num
8      while (original>0):
9          digit=original%10
10         sum+=digit**digit_count
11         original//=10
12     if num==sum:
13         print(num)
```

OUTPUT

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
Python + - [ ] [ ] ...
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/task/pgm18.py
enter lower limit:100
enter upper limit:500
153
370
371
407
```

16. Program to Check Armstrong Numbers in Python.

PROGRAM

```
pgm19.py x
pgm19.py > ...
1  num=input("enter number:")
2  digit_count=len(num)
3  num=int(num)
4  sum=0
5  original=num
6  while(num!=0):
7      digit=num%10
8      exp=digit**digit_count
9      sum+=exp
10     num=num//10
11     print("amstrong" if original==sum else "not amstrong")
12
```

OUTPUT

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
Python + v []

PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/task/pgm19.py
enter number:153
amstrong
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/task/pgm19.py
enter number:160
not amstrong
PS C:\Users\Admin\Desktop\task> |
```

17. Write a Python program to check if a list is empty or not.

PROGRAM

```
pgm21.py x
pgm21.py > ...
1  lst=[]
2  if lst==[]:
3      print("list is empty")
4  else:
5      print("list is not empty")
```

OUTPUT

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
Python + v []

PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/task/pgm21.py
list is empty
PS C:\Users\Admin\Desktop\task>
```


18. Write a Python program to multiply all the items in a list.

PROGRAM

```
pgm22.py x
pgm22.py > ...
1  lst=[1,2,3,4]
2  new_lst=[]
3  for i in lst:
4      new_lst.append(i**2)
5  print(new_lst)
6
```

OUTPUT

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
Python + v [ ] [ ] ... ^ x

PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/task/pgm22.py
[1, 4, 9, 16]
PS C:\Users\Admin\Desktop\task>
```

19. Write a Python program to clone or copy a list.

PROGRAM

```
pgm23.py x
pgm23.py > ...
1  lst=[1,2,3,4]
2  copy_lst=lst.copy()
3  print(copy_lst)
```

OUTPUT

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
Python + v [ ] [ ] ... ^ x

PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/task/pgm23.py
[1, 2, 3, 4]
PS C:\Users\Admin\Desktop\task>
```

20. Write a Python program to print the numbers of a specified list after removing even numbers from it.

PROGRAM

```
pgm24.py x
pgm24.py > ...
1  lst=[1,2,3,4,5]
2  for i in lst:
3      if i%2==0:
4          lst.remove(i)
5  print(lst)
```

OUTPUT

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [ ] [X]

PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/skstop/task/pgm24.py
[1, 3, 5]
PS C:\Users\Admin\Desktop\task>
```

21. Write a Python program to shuffle and print a specified list.

PROGRAM

```
pgm25.py > ...
1 import random
2 lst=["red","green","yellow","blue"]
3 random.shuffle(lst)
4 print(lst)
```

OUTPUT

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [ ] [X]

PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/skstop/task/pgm25.py
['yellow', 'blue', 'red', 'green']
PS C:\Users\Admin\Desktop\task>
```

22. Write a Python program to check whether the n-th element exists in a given list.

PROGRAM

```
pgm27.py > ...
1 lst=[2,4,6,8]
2 num=int(input("enter element to search:"))
3 for i in lst:
4     if i==num:
5         print("element found")
6         break
7 else:
8     print("element not found")
```

OUTPUT

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python + - [ ] [X] ... ^

PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/skstop/task/pgm27.py
enter element to search:6
element found
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/skstop/task/pgm27.py
enter element to search:5
element not found
PS C:\Users\Admin\Desktop\task>
```

23. Write a Python function to find the maximum of three numbers.

PROGRAM

```
pgm28.py > ...
1 def maxnum(n1,n2,n3):
2     if n1>n2 and n1>n3:
3         return n1
4     elif n2>n1 and n2>n3:
5         return n2
6     elif n3>n1 and n3>n2:
7         return n3
8     print(maxnum(10,30,20))]
```

OUTPUT

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/task/pgm28.py
30
PS C:\Users\Admin\Desktop\task>
```

24. Write a Python function that accepts a string and counts the number of upper- and lower-case letters.

PROGRAM

```
pgm29.py > ...
1 def lowerupper(string):
2     upper_case=0
3     lower_case=0
4     for ch in string:
5         if ch.islower():
6             lower_case+=1
7         else:
8             upper_case+=1
9     return lower_case, upper_case
10 string="PYthon"
11 lower,upper=lowerupper(string)
12 print("No.of uppercase letters:",upper)
13 print("No.of lowercase letters:",lower)
```

OUTPUT

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/task/pgm29.py
No.of uppercase letters: 2
No.of lowercase letters: 4
PS C:\Users\Admin\Desktop\task>
```

25. Write a Python program to reverse the order of the items in the array.

PROGRAM

```
pgm30.py > ...  
1  arr=["red","green","yellow","blue"]  
2  arr.reverse()  
3  print(arr)  
4
```

OUTPUT

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  
Python + - [ ] [ ] ...  
PS C:\Users\Admin\Desktop\task> & C:/Users/Admin/AppData/Local/Programs/Python/Python311/python.exe c:/Users/Admin/Desktop/task/pgm30.py  
['blue', 'yellow', 'green', 'red']  
PS C:\Users\Admin\Desktop\task>
```