## Solve these Questions using loops and recursion

**1. Find Sum of numbers from 1 to n**

**find out the sum of numbers from 1 to n like 1 + 2 + 3 + 4 +, etc**

def recurSum(n):

    if n <= 1:

        return n

    return n + recurSum(n - 1)

n=int(input("Enter a number:"))

print(recurSum(n))

## 2. Reverse a string

def reverse\_string(str):

    str1 = ""

    for i in str:

        str1 = i + str1

    return str1

str = str(input("Enter the string:"))

print("The original string is: ",str)

print("The reverse string is",reverse\_string(str))

**3. Adding all numbers in a list**

def sum\_arr(arr,size):

   if (size == 0):

     return 0

   else:

     return arr[size-1] + sum\_arr(arr,size-1)

n=int(input("Enter the number of elements for list:"))

a=[]

for i in range(0,n):

    element=int(input("Enter element:"))

    a.append(element)

print("The list is:")

print(a)

print("Sum of items in list:")

b=sum\_arr(a,n)

print(b)

**python Practice Questions**

**1.# we need to write a python program to find the power of a number using recursion**

**# input : num = 2, power= 3**

**# output : 8**

def power(N, P):

    if P == 0:

        return 1

       return (N\*power(N, P-1))

if \_\_name\_\_ == '\_\_main\_\_':

    N = 2

    P = 3

    print(power(N, P))

**2.Assign a different name to function and call it through the new name**

def display\_student(name, age):

    print(name, age)

display\_student("Emma", 26)

showStudent = display\_student

showStudent("Emma", 26)

**3.Python Program to Print All Odd Numbers in a Range**

lower=int(input("Enter the lower limit for the range:"))

upper=int(input("Enter the upper limit for the range:"))

for i in range(lower,upper+1):

    if(i%2!=0):

        print(i)

**4.Python Program to Check Whether a Given Number is Even or Odd using Recursion**

def check(n):

    if (n < 2):

        return (n % 2 == 0)

    return (check(n - 2))

n=int(input("Enter number:"))

if(check(n)==True):

      print("Number is even!")

else:

      print("Number is odd!")

**5.Python Program to Check whether a Number is Prime or Not using Recursion**

def check(n, div = None):

    if div is None:

        div = n - 1

    while div >= 2:

        if n % div == 0:

            print("Number not prime")

            return False

        else:

            return check(n, div-1)

    else:

        print("Number is prime")

        return 'True'

n=int(input("Enter number: "))

check(n)

**6.Python Program to Print All Integers that Aren’t Divisible by Either 2 or 3**

max\_num = int(input("Enter a number:"))

n = 1

print("Numbers not divisible by 2 and 3")

while n <= max\_num:

    if n % 2 != 0 and n % 3 != 0:

        print(n)

    n = n+1

**7.Python Program to Check if a Number is a Palindrome**

n=int(input("Enter number:"))

temp=n

rev=0

while(n>0):

    dig=n%10

    rev=rev\*10+dig

    n=n//10

if(temp==rev):

    print("The number is a palindrome!")

else:

    print("The number isn't a palindrome!")

**8.Python Program to Count the Number of Vowels in a String**

string=raw\_input("Enter string:")

vowels=0

for i in string:

      if(i=='a' or i=='e' or i=='i' or i=='o' or i=='u' or i=='A' or i=='E' or i=='I' or i=='O' or i=='U'):

            vowels=vowels+1

print("Number of vowels are:")

print(vowels)

**9.Python Program to Remove Odd Indexed Characters in a string**

a=str(input("Enter a string:"))

b=str(input("Enter a string:"))

def odd\_values\_string(str):

  result = ""

  for i in range(len(str)):

    if i % 2 == 0:

      result = result + str[i]

  return result

print(odd\_values\_string(a))

print(odd\_values\_string(b))

**10.Python Program to Remove the nth Index Character from a Non-Empty String**

def remove(string, n):

      first = string[:n]

      last = string[n+1:]

      return first + last

string=raw\_input("Enter the sring:")

n=int(input("Enter the index of the character to remove:"))

print("Modified string:")

print(remove(string, n))

**11.Python Program to Replace Every Blank Space with Hyphen in a String**

my\_string = input("Enter a string :")

print("The string entered by user is :")

print(my\_string)

my\_string = my\_string.replace(' ','-')

print("The modified string:")

print(my\_string)

**12.Python Program to Calculate the Length of a String Without using Library Functions**

str = input("Enter a string: ")

print("Length of the input string is:", len(str))

**13. Python Program to Count Number of Lowercase Characters in a String**

my\_string = str(input("Enter the string:"))

print("The string is ")

print(my\_string)

my\_counter=0

for i in my\_string:

   if(i.islower()):

      my\_counter=my\_counter+1

print("The number of lowercase characters in the string are :")

print(my\_counter)

**14.Python Program to Count the Number of Vowels in a String**

def vowel\_count(str):

    count = 0

    vowel = set("aeiouAEIOU")

    for alphabet in str:

        if alphabet in vowel:

            count = count + 1

    print("No. of vowels :", count)

str = str(input("Enter The String:"))

vowel\_count(str)

**15.Python Program to Count Number of Uppercase and Lowercase Letters in a String**

Str=str(input("Enter the string:"))

lower=0

upper=0

for i in Str:

      if(i.islower()):

            lower+=1

      else:

            upper+=1

print("The number of lowercase characters is:",lower)

print("The number of uppercase characters is:",upper)

**16.Python Program to Find Common Characters in Two Strings**

s1=str(input("Enter first string:"))

s2=str(input("Enter second string:"))

a=list(set(s1)&set(s2))

print("The common letters are:")

for i in a:

    print(i)

**17.String Palindrome Program in Python**

def isPalindrome(s):

    return s == s[::-1]

# Driver code

s = str(input("Enter the string:"))

ans = isPalindrome(s)

if ans:

    print("Yes")

else:

    print("No")

**18.Python Program to Determine How Many Times a Given Letter Occurs in a String Recursively**

def check\_frequency(my\_str,my\_ch):

   if not my\_str:

      return 0

   elif my\_str[0]==my\_ch:

      return 1+check\_frequency(my\_str[1:],my\_ch)

   else:

      return check\_frequency(my\_str[1:],my\_ch)

my\_string = input("Enter the string :")

my\_char = input("Enter the character that needs to be checked :")

print("The frequency of " + str(my\_char) + " is :")

print(check\_frequency(my\_string,my\_char))