In [ ]:
```
#excercise --1(BASICS)
# 1.a Running instructions in interactive  interpreter and a python script
# Ans.--> shift+Enter------>Run cell
#     -->ctrl+s-------->save
#     -->ctrl+M+B------>New cell
#     -->ctrl+M+D------>Delete cell
#     -->shift+/------>Comment
```

In [1]:
```
#2 raising indentation error and correcting it
#Error code
num=int(input("Enter a  number:"))
if num%2==0:
    print("It's an even number")
else:
print("It's is an odd number")
```

```
  File "C:\Users\KARTHIK\AppData\Local\Temp/ipykernel_16944/4064529600.py", line 7
    print("It's is an odd number")
    ^
IndentationError: expected an indented block
```

In [2]:
```
#CORRECT CODE
num=int(input("Enter a number::"))
if num%2==0:
    print("It's an even number")
else:
    print("It's an odd number")
```

```
Enter a number::57
It's an odd number
```

In [3]:
```
## EXCERCISE__2
## 3 compute GCD of two numbers

def gcdoftwo(a,b):
    if a==0:
        return b
    return gcdoftwo(b%a,a)

num1=int(input("Enter 1st num"))
num2=int(input("Enter 2nd num"))

result=gcdoftwo(num1,num2)
print(result)
```

```
Enter 1st num8
Enter 2nd num9
1
```

In [4]:
```
# program to add 2 numbers input taken via command line arguments
import sys
num1=int(sys.arg[v])
num2=int(sys.arg[v])
sum=num1+num
print(sum)
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
~\AppData\Local\Temp/ipykernel_16944/973271857.py in <module>
      1 # program to add 2 numbers input taken via command line arguments
      2 import sys
----> 3 num1=int(sys.arg[v])
      4 num2=int(sys.arg[v])
      5 sum=num1+num

AttributeError: module 'sys' has no attribute 'arg'
```

In [5]:
```
#EXCERCISE--3------CONTROL FLOW-------
#5.checking for even number

num=int(input())
if num%2==0:
    print("Even number")
else:
    print("ODD number")
```

```
46
Even number
```

In [6]:
```
#6. program using for loop that loops over a sequence
inp=int(input())
for i in range(inp):
    print(i,end=" ")
```

```
20
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
```

In [7]:
```
#7. program to print fibonacci sequence
inp=int(input())
counter=0
n1=0
n2=1
while counter<inp:

    print(n1,end=" ")
    temp=n1+n2
    n1=n2
    n2=temp
    counter+=1
```

```
25
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597 2584 4181 6765 10946 17711 28657 46368
```

In [8]:
```
#8.program to print all primes in given interval
a,b=map(int,input().split())
for i in range(a,b):
    if i>1:

        for j in range(2,i):

            if(i%j)==0:

                break
        else:
                print(i,end=" ")
```

```
25 100
29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97
```

In [9]:
```
#EXCERCISE 4
#9. Find mean median mode for given set of numbers in a list
l1=list(map(int,input().split()))

mean=sum(l1)/len(l1)
median=l1[len(l1)//2]
mode=max(set(l1),key=l1.count)
print("mean is",mean)
print("median is",median)
print("mode is",mode)
```

```
2 9 8 5 5 5 9 6 7 4 4 4 4 4
mean is 5.428571428571429
median is 6
mode is 4
```

In [10]:
```
#10. program to convert a list and tuple into arrays
import numpy as np
l2=[3,6,7,1,90,76,56]
tup=(3,5,77,8,4,9,2)
arr=np.array(l2)
arr1=np.array(tup)
print(arr)
print(arr1)
```

```
[ 3  6  7  1 90 76 56]
[ 3  5 77  8  4  9  2]
```

In [11]:
```
# 11. program to find comman values between two arrys
l1=[int(x) for x in input().split()]
l2=[int(x) for x in input().split()]
commonelements=[]
for i in l1:
    if i in l2:
        commonelements.append(i)
print(set(commonelements))
```

```
2 5 4 97 6 3 8 45
45 6 58 4 24 69 48 53
{4, 45, 6}
```

In [12]:
```
#EXCERCISE__5
#12. program to count number of characters in a string and store them in a dictonary data structure
diction={}
inp=input()
inp_li=list(inp)
for i in inp_li:
    if i not in diction:
        diction[i]=1
    else:
        diction[i]=diction[i]+1
print(diction)
```

```
KARTHIKSALIKANTI
{'K': 3, 'A': 3, 'R': 1, 'T': 2, 'H': 1, 'I': 3, 'S': 1, 'L': 1, 'N': 1}
```

In [13]:
```
#13. program to combine lists into a dictionary
l1=[(x) for x in input().split()]
l2=[int(x) for x in input().split()]
diction={}
for i in l1:
    for j in l2:
        diction[i]=j
        l2.remove(j)
        break
print(diction)
```

```
a n g i f k l
1 54 6 0 6
{'a': 1, 'n': 54, 'g': 6, 'i': 0, 'f': 6}
```

In [14]:
```
#EXCERCISE ---6------STRINGS
#14. program to check whether a string starts with specified character
inp=input("ENTER THE STRING:")
char=input("ENTER A CHARACTER:")
if(inp[0]==char):
    print("string starts vwith specified character")
else:
    print("string starts with a different character")
```

```
ENTER THE STRING:KARTHIKSALIAKNTI
ENTER A CHARACTER:S
string starts with a different character
```

In [15]:
```
#15. program to check whether string is palindrome or not
inp=input()
inp=inp.lower()
rev_inp=inp[::-1]
if(inp==rev_inp):
    print("It is a palindrome")
else:
    print("It is not a palindrome")
```

```
KAMALAKUCHA
It is not a palindrome
```

In [16]:
```
#EXCERCISE --7 ----strings continued
#16. program to split and join a string
inp=input("Enter a string::")
var=inp.split(" ")
resultant=".".join(var)
print(resultant)
```

```
Enter a string::Hyderabad is capital of Telangana
Hyderabad.is.capital.of.Telangana
```

In [17]:
```
# 17python program to sort words in alphabetical order
inp=input("Enter the string::")
temp=inp.split()
sortinp=sorted(temp)
print(sortinp)
```

```
Enter the string::hello welcome to college vnr
['college', 'hello', 'to', 'vnr', 'welcome']
```

In [9]:
```
#EXCERCISE----8----- FILES
#18. write a program to print each line of afile in reverse order
f=open("sample.txt","r")
s=""
for p in f:
    s=s+p[::-1]
print(s)
f.close()
```

```
elif elpmasa si sihT
```

In [12]:
```
#19. Write a program to compute the number of characters, words and lines in a file.
f=open("sample.txt","r")
s=""
for i in f:
    s=s+i
print("Number of characters:",len(s)-s.count(' '))
print("Number of words:",s.count(' ')+1)
print("Number of lines:",s.count('\n')+1)
```

```
Number of characters: 17
Number of words: 4
Number of lines: 1
```

In [15]:
```
#20. Write a program to count frequency of characters in a given file.
f=open("sample.txt","r")
s=""
for i in f:
     s=s+i
diction={}
for i in s:
     if i in diction:
         diction[i]+=1
     else:
         diction[i]=1
print(diction)
```

```
{'T': 1, 'h': 1, 'i': 3, 's': 3, ' ': 3, 'a': 2, 'm': 1, 'p': 1, 'l': 2, 'e': 2, 'f': 1}
```

In [19]:
```
#EXCERCISE----9------FUNCTIONS
#21. simple calculator program using functions
def addition(a,b):
    print(a+b)
def subtraction(a,b):
    print(a-b)
def multiplication(a,b):
    print(a*b)
def division(a,b):
    print(a/b)
print("1.Addition\n2.Subtraction\n3.Multiplication\n4.Division")
n=int(input())
x=int(input())
y=int(input())
if n==1:
    addition(x,y)
elif n==2:
    subtraction(x,y)
elif n==3:
    multiplication(x,y)
elif n==4:
    division(x,y)
else:
    print("ENTER A VALID OPTION")
```

```
1.Addition
2.Subtraction
3.Multiplication
4.Division
3
6
5
30
```

In [20]:
```
#22. factorial of a number using recursion

def factorial(num):
    if(num==0 or num==1):
        return 1
    else:
        return n*factorial(num-1)

num=int(input())
out=factorial(num)
print(out)
```

```
8
2187
```

In [21]:
```
#23. write a function dups to find all duplicates in the list
def duplicates(li):
    temp=set(li)
    for i in temp:
        if(li.count(i)>1):
            res_li.append(i)

    return res_li
li=[int(x) for x in input().split()]
res_li=[]
result=duplicates(li)
print(result)
```

```
1 3 5 66 66 8 4 4 5 2
[66, 4, 5]
```

In [24]:
```
#24. Write a function unique to find all the unique elements of a list.
def unique(lis):
     list_se=set(lis)
     for i in list_se:
         if(lis.count(i)==1):
                res_li.append(i)
     return res_li
li=[int(x) for x in input().split()]
res_li=[]
result=unique(li)
print(result)
```

```
5 88 2 3 77 1 11 2 3 77 5 99
[1, 99, 11, 88]
```

In [25]:
```
#25.Write a function cumulative_ product to compute cumulative product of a list of numbers.
def cummulative_product(lis):
     multi=1
     for p in lis:
         multi=p*multi
     return multi
li=[int(x) for x in input().split()]
result =cummulative_product(li)
print(result)
```

```
9 8 7 6 5 4 3 2 1
362880
```

In [26]:
```
#26.write a function reverse to print the given list in the reverse order.
def reverse(lis):
     init_li=lis
     for i in range(len(init_li)):
         rev_lis.append(lis.pop())
     return rev_lis
li=[int(x) for x in input().split()]
rev_lis=[]
result =reverse(li)
print(result)
```

```
9 5 1 7 3 645 48
[48, 645, 3, 7, 1, 5, 9]
```

In [28]:
```
#27.write function to compute GCD, LCM of two numbers
def gcd(a,b):
     if a == 0:
         return b
     return gcd(b % a, a)
def lcm(result1):
     return (a // result1)* b
a=int(input("Enter first number:"))
b=int(input("Enter second number:"))
result1=gcd(a,b)
result2=lcm(result1)
print(result2,result1)
```

```
Enter first number:9
Enter second number:5
45 1
```

In [ ]: