In [ ]:

```python
#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]:

```python
#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 [11]:

```python
#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::86
It's an even number
```

In [12]:

```python
## 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 num6
Enter 2nd num9
3
```

In [4]:

```python
# 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 [13]:

```python
#EXCERCISE--3------CONTROL FLOW-------
#5.checking for even number

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

```
59
ODD number
```

In [14]:

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

```
15
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
```

In [15]:

```python
#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
```

```
14
0 1 1 2 3 5 8 13 21 34 55 89 144 233
```

In [17]:

```python
#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=" ")

```

```
10 46
11 13 17 19 23 29 31 37 41 43
```

In [19]:

```python
#EXCERCISE 4
#9. Find mean median mode for given set of numbers in a list
li1=list(map(int,input().split()))

mean=sum(li1)/len(li1)
median=li1[len(li1)//2]
mode=max(set(li1),key=li1.count)
print("mean is",mean)
print("median is",median)
print("mode is",mode)
```

```
1 2 4 4 6 8 5 5 5 7
mean is 4.7
median is 8
mode is 5
```

In [10]:

```python
#10. program to convert a list and tuple into arrays
import numpy as np
li2=[3,6,7,1,90,76,56]
tupl=(3,5,77,8,4,9,2)
arr=np.array(li2)
arr1=np.array(tupl)
print(arr)
print(arr1)
```

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

In [11]:

```python
# 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 [2]:

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

```
VIPIN RANGU
{'V': 1, 'I': 2, 'P': 1, 'N': 2, ' ': 1, 'R': 1, 'A': 1, 'G': 1, 'U': 1}
```

In [3]:

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

```
A b i l t
1 58 3 4 9
{'A': 1, 'b': 58, 'i': 3, 'l': 4, 't': 9}
```

In [4]:

```python
#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 with specified character")
else:
    print("string starts with a different character")
```

```
ENTER THE STRING:VIPIN RANGU
ENTER A CHARACTER:V
string starts with specified character
```

In [5]:

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

```
MANGO
It is not a palindrome
```

In [6]:

```python
#EXCERCISE --7 ----strings continued
#16. program to split and join a string
inp=input("Enter a string::")
variable=inp.split(" ")
result=".".join(variable)
print(result)
```

```
Enter a string::I am very lucky
I.am.very.lucky
```

In [7]:

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

```
Enter the string::i am studying in vnr
['am', 'i', 'in', 'studying', 'vnr']
```

In [8]:

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

```
rnv egelloc ot emoclew olleh
```

In [9]:

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

```
Number of characters: 24
Number of words: 5
Number of lines: 1
```

In [10]:

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

```
{'h': 1, 'e': 5, 'l': 5, 'o': 4, ' ': 4, 'w': 1, 'c': 2, 'm': 1, 't': 1, 'g': 1, 'v': 1, 'n': 1, 'r': 1}
```

In [20]:

```python
#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
4
9
18
0.5
```

In [21]:

```python
#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)
```

```
7
4096
```

In [22]:

```python
#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)
```

```
2 5 3 8 4 4 4 6 7 9
[4]
```

In [23]:

```python
#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)
```

```
2 5 6 4 4 8 8 9 1 3 4 7 5 6
[1, 2, 3, 7, 9]
```

In [24]:

```python
#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)
```

```
 1 56 4 78 9 3 1 5 47 6 98 2 4 6 8
25031264993280
```

In [25]:

```python
#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)
```

```
1 2 4 86 47 5 9 3 58 6 41 2 587
[587, 2, 41, 6, 58, 3, 9, 5, 47, 86, 4, 2, 1]
```

In [26]:

```python
#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:28
Enter second number:15
420 1
```

In [ ]:

```python
```