20. From a list of integers, create a list removing even numbers.

```
def list():
        list1=[]
        odd=[]
        num=int(input("Total number of elements : "))
        for i in range(num):
                list1.append(int(input("Enter a number : ")))
        odd=[each for each in list1 if each %2!=0]
        print(odd)
```

OUTPUT

```
>>> list()
Total number of elements : 5
Enter a number : 1
Enter a number : 2
Enter a number : 3
Enter a number : 4
Enter a number : 5
[1, 3, 5]
```

Course Outcome 2 (CO2)

1. Program to find the factorial of a number

```
def fac(n):
    fact=1
    if n==0:
        print(n,"!=",fact)
    for i in range(1,n+1):
        fact=i*fact
    print(n,"!=",fact)

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

OUTPUT

```
Enter a number: 4
4 != 24
```

2. Generate Fibonacci series of N terms

```
def fib(n):
    a, b = 0, 1
    while a < n:
        print(a)
        a, b = b, a + b

n = int(input("Enter the number:"))
fib(n)
```

OUTPUT

```
"E:\MCA\S1\prg lab\venv\Scripts\python.e
Enter the number:5
0
1
1
2
3
```

3. Find the sum of all items in a list

```
def sum_list(get_list):
    print(get_list)
    return sum(get_list)

count = int(input("Total number of list items : "))
list_get=[]
for i in range(count):
    list_get.append(int(input("List item : ")))
lsum = sum_list(list_get)
print(lsum)
```

OUTPUT

```
Total number of list items : 5
List item : 1
List item : 2
List item : 3
List item : 4
List item : 5
[1, 2, 3, 4, 5]
15
```

4.Generate a list of four digit numbers in a given range with all their digits even and the number is a perfect square.

```
num1 = int(input("Enter a number: "))
num2 = int(input("Enter a number: "))
for i in range(num1,num2+1):
   for j in range(32,100+1):
      if i==j*j:
         string=str(i)
         if int(string[0])%2==0 and int(string[1])%2==0 and
int(string[2])%2==0 and int(string[3])%2==0:


            print(i)
```

OUTPUT

```
"E:\MCA\S1\prg lab\venv
Enter a number: 1000
Enter a number: 9999
4624
6084
6400
8464
```

5.Display the given pyramid with step number accepted from user.

```
x=int(input("enter a number"))
j,i=1,1
for i in range(1,x+1):
    p=i
    for j in range(1,i+1):
        p=i*j
        print(p,end="",flush=True)
        print("",end=",")
    print("\n")
```

OUTPUT

```
enter a number5
1,

2,4,

3,6,9,

4,8,12,16,

5,10,15,20,25,
```

6. Count the number of characters (character frequency) in a string.

```
def charfreq(str1):
    dict = {}
    for n in str1:
        keys = dict.keys()
        if n in keys:
            dict[n] += 1
        else:
            dict[n] = 1
    return dict
print(charfreq('ashish'))
```

OUTPUT

```
"E:\MCA\S1\prg lab\venv\Scripts\python
{'a': 1, 's': 2, 'h': 2, 'i': 1}
```

7. Add ‘ing’ at the end of a given string. If it already ends with ‘ing’, then add ‘ly’

```
def adstr(s1):
    length=len(s1)
    if length > 2:
        if s1[-3:]=='ing':
            s1+='ly'
        else:
            s1+='ing'
    return s1

print(adstr('happy'))
print(adstr('playing'))
```

OUTPUT

```
 "E:\MCA\S1\prg
 happying
 playingly
```

8. Accept a list of words and return length of longest word.

```
def longest(get_name):
    index=0
    len_index=0
    length=0
    get_name = get_name.split()
    for i in get_name:
        if len(i) > length:
            length=len(i)
            len_index=index
        index +=1
    return get_name[len_index]
str = input("Enter the string: ")
word = longest(str)
print(word)
```

OUTPUT

```
Enter the string: happy brithday to you
brithday
```

9. Construct following pattern using nested loop

```
*
* *
 * * *
 * * * *
* * * * *
* * * *
 * * *
 * *
 *
 *
```

```
n=5
for i in range(n):
    for j in range(i):
        print('*',end="")
    print('')

for i in range(n,0,-1):
    for j in range(i):
        print('*', end="")
    print('')
```

OUTPUT

```
*
**
***
****
*****
****
***
**
*
```

10. Generate all factors of a number.

```
def fact(n):
    print("The factors of ",n,"are : ")
    for i in range(1,n+1):
        if n % i==0:
            print(i)
n=100
fact(n)
```

OUTPUT

```
The factors of  100 are :
1
2
4
5
10
20
25
50
100
```

11. Write lambda functions to find area of square, rectangle and triangle.

```
print('Enter the a side of square')
s = int(input())
print('Enter the length and breadth of rectangle')
l = int(input())
b = int(input())
print('Enter the base and height of triangle')
h = int(input())
d = int(input())
x = lambda s : s * s
y = lambda l,b : l * b
t=0.5
z= lambda h,d,t : h * d * t
print("Area of square is :",x(s))
print('Area  of rectangle',y(l,b))
print('Area of triangle',z(h,d,t))
```

OUTPUT

```
"E:\MCA\S1\prg lab\venv\Scripts\python.exe
Enter the a side of square
3
Enter the length and breadth of rectangle
4
5
Enter the base and height of triangle
4
5
Area of square is : 9
Area  of rectangle 20
Area of triangle 10.0
```