```
# 1.Python program to display odd number from 1 to 20 using range ()
object.

for i in range(1, 21):
    if(i % 2 != 0):
        print(i)
```

Output:

import sys; print('Python %s on %s' % (sys.version, sys.platform))

sys.path.extend(['D:\\CODING\\PYTHON', 'D:/CODING/PYTHON'])

PyDev console: starting.

Python 3.9.4 (tags/v3.9.4:1f2e308, Apr 6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32

runfile('D:/CODING/PYTHON/venv/program12.py', wdir='D:/CODING/PYTHON/venv')

1

3

5

7

9

11

13

15

17

19

```
#2. Python program to display and find the element of a  list using for
loop.
```

```
list = [1, 2, 3, 13.3, "Lucifer", 'Money Heist', None, True]

for i in range(len(list)):
    print(list[i])
```

Output:

import sys; print('Python %s on %s' % (sys.version, sys.platform))

sys.path.extend(['D:\\CODING\\PYTHON', 'D:/CODING/PYTHON'])

PyDev console: starting.

Python 3.9.4 (tags/v3.9.4:1f2e308, Apr 6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32

runfile('D:/CODING/PYTHON/venv/program12.py', wdir='D:/CODING/PYTHON/venv')

1

2

3

13.3

Lucifer

Money Heist

None

True

```
#3. Python program to display and find the sum of a list of number using
for loop.


total = 0
ele = 0
```

```
list1 = [1, 25, 18, 19, 26]

while (ele < len(list1)):
    total = total + list1[ele]
    ele += 1

print("Sum of all elements in given is ", total)
```

Output:

import sys; print('Python %s on %s' % (sys.version, sys.platform))

sys.path.extend(['D:\\CODING\\PYTHON', 'D:/CODING/PYTHON'])

PyDev console: starting.

Python 3.9.4 (tags/v3.9.4:1f2e308, Apr 6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32

runfile('D:/CODING/PYTHON/venv/program12.py', wdir='D:/CODING/PYTHON/venv')

Sum of all elements in given is 89

```
#4. Python program to display the multiplication table.

num = int(input("Enter the number : "))
for i in range(1, 11):

    print(f"{num}X{i}={num*i}")
```

Output:

```
import sys; print('Python %s on %s' % (sys.version, sys.platform))
sys.path.extend(['D:\\CODING\\PYTHON', 'D:/CODING/PYTHON'])
PyDev console: starting.
Python 3.9.4 (tags/v3.9.4:1f2e308, Apr  6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32
runfile('D:/CODING/PYTHON/venv/program12.py', wdir='D:/CODING/PYTHON/venv')
Enter the number : >? 5
5X1=5
5X2=10
5X3=15
5X4=20
5X5=25
5X6=30
5X7=35
5X8=40
5X9=45
5X10=50
```

```python
#5. Python program to print the Fibonacci sequence.


nterms = int(input("How many terms? "))

# first two terms
n1, n2 = 0, 1
count = 0

# check if the number of terms is valid
if nterms <= 0:
   print("Please enter a positive integer")
elif nterms == 1:
   print("Fibonacci sequence upto",nterms,":")
   print(n1)
```

```
else:
   print("Fibonacci sequence:")
   while count < nterms:
       print(n1)
       nth = n1 + n2
       # update values
       n1 = n2
       n2 = nth
       count += 1
```

Output:

import sys; print('Python %s on %s' % (sys.version, sys.platform))

sys.path.extend(['D:\\CODING\\PYTHON', 'D:/CODING/PYTHON'])

PyDev console: starting.

Python 3.9.4 (tags/v3.9.4:1f2e308, Apr 6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32

runfile('D:/CODING/PYTHON/venv/program12.py', wdir='D:/CODING/PYTHON/venv')

How many terms? >? 5

Fibonacci sequence:

0

1

1

2

3

```
#6. Write a Python Program for Sum of squares of first n natural numbers.
(12 + 22 + 32 + ….. + N2).

num = int(input('Enter last num : '))
total = 0

for i in range(num+1):
    total = total + (i**2)


print(f"Sum of squares of first {num} natural numbers is {total}")
```

Output:

import sys; print('Python %s on %s' % (sys.version, sys.platform))

sys.path.extend(['D:\\CODING\\PYTHON', 'D:/CODING/PYTHON'])

PyDev console: starting.

Python 3.9.4 (tags/v3.9.4:1f2e308, Apr 6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32

runfile('D:/CODING/PYTHON/venv/program12.py', wdir='D:/CODING/PYTHON/venv')

Enter last num : >? 7

Sum of squares of first 7 natural numbers is 140

```
#7. Python Program to Compute a Polynomial Equation given that the
Coefficients of the Polynomial are stored in a List.

import math
print("Enter the coefficients of the form ax^3 + bx^2 + cx + d")
lst = []
for i in range(0, 4):
    a = int(input("Enter coefficient:"))
    lst.append(a)
x = int(input("Enter the value of x:"))
sum1 = 0
j = 3
for i in range(0, 3):
    while(j > 0):
        sum1 = sum1+(lst[i]*math.pow(x, j))
        break
    j = j-1
sum1 = sum1+lst[3]
print("The value of the polynomial is:", sum1)
```

Output:

import sys; print('Python %s on %s' % (sys.version, sys.platform))

sys.path.extend(['D:\\CODING\\PYTHON', 'D:/CODING/PYTHON'])

PyDev console: starting.

Python 3.9.4 (tags/v3.9.4:1f2e308, Apr 6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32

runfile('D:/CODING/PYTHON/venv/program12.py', wdir='D:/CODING/PYTHON/venv')

Enter the coefficients of the form ax^3 + bx^2 + cx + d

Enter coefficient:>? 5

Enter coefficient:>? 3

Enter coefficient:>? 2

Enter coefficient:>? 1

Enter the value of x:>? 7

The value of the polynomial is: 1877.0

```
#8. Python Program to Find the Sum of Sine Series.

import math
x = int(input("Enter Value Of 'X' : "))
n = int(input("Enter Value Of 'N' : "))
sine = 0
for i in range(n):
    sign = (-1)**i
    pi = 22/7
    y = x*(pi/180)
    sine += ((y**(2.0*i+1))/math.factorial(2*i+1))*sign
print(f"Sum of Sine Series : {sine} ")
```

Output:

import sys; print('Python %s on %s' % (sys.version, sys.platform))

sys.path.extend(['D:\\CODING\\PYTHON', 'D:/CODING/PYTHON'])

PyDev console: starting.

Python 3.9.4 (tags/v3.9.4:1f2e308, Apr 6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32

runfile('D:/CODING/PYTHON/venv/program12.py', wdir='D:/CODING/PYTHON/venv')

Enter Value Of 'X' : >? 5

Enter Value Of 'N' : >? 2

Sum of Sine Series : 0.08719069148333446

```
#9. Python Program to determine all Pythagorean Triplets in the Range.

limit = int(input("Enter upper limit:"))
c = 0
m = 2
while(c < limit):
    for n in range(1, m+1):
        a = m*m-n*n
        b = 2*m*n
        c = m*m+n*n
        if(c > limit):
            break
        if(a == 0 or b == 0 or c == 0):
            break
        print(a, b, c)
    m = m+1
```

Output:

import sys; print('Python %s on %s' % (sys.version, sys.platform))

sys.path.extend(['D:\\CODING\\PYTHON', 'D:/CODING/PYTHON'])

PyDev console: starting.

Python 3.9.4 (tags/v3.9.4:1f2e308, Apr 6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32

runfile('D:/CODING/PYTHON/venv/program12.py', wdir='D:/CODING/PYTHON/venv')

Enter upper limit:>? 20

3 4 5

8 6 10

5 12 13

15 8 17

12 16 20

```
#10. Write a Python program to construct the following pattern, using a
nested for loop.

n = int(input('Enter Value of n = '))
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:

import sys; print('Python %s on %s' % (sys.version, sys.platform))

sys.path.extend(['D:\\CODING\\PYTHON', 'D:/CODING/PYTHON'])

PyDev console: starting.

Python 3.9.4 (tags/v3.9.4:1f2e308, Apr 6 2021, 13:40:21) [MSC v.1928 64 bit (AMD64)] on win32

runfile('D:/CODING/PYTHON/venv/program12.py', wdir='D:/CODING/PYTHON/venv')

Enter Value of n = >? 8

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