```
#1. Python Program to print alphabet 'A'.

def print_pattern(n):

    for i in range(n):


        for j in range((n // 2) + 1):


            if ((j == 0 or j == n // 2) and i != 0 or


                    i == 0 and j != 0 and j != n // 2 or


                    i == n // 2):
                print("*", end="")
            else:
                print(" ", end="")

        print()

num = int(input("Enter the size: \t "))

print_pattern(num)
```

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 size:    >? 6
 **
*  *
*  *
****
*  *
*  *
```

```
#2. Python Program to print alphabet 'G'.

result_str="";
```

```
for row in range(0,7):
    for column in range(0,7):
        if ((column == 1 and row != 0 and row != 6) or ((row == 0 or row ==
6) and column > 1 and column < 5) or (row == 3 and column > 2 and column <
6) or (column == 5 and row != 0 and row != 2 and row != 6)):
            result_str=result_str+"*"
        else:
            result_str=result_str+" "
    result_str=result_str+"\n"
print(result_str);
```

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')

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

```
#3. Python program to print double sided stair case pattern.

def pattern(n):

    for i in range(1, n + 1):

        k = i + 1 if (i % 2 != 0) else i
```

```
        for g in range(k, n):
            if g >= k:
                print(end="  ")


        for j in range(0, k):
            if j == k - 1:
                print(" * ")
            else:
                print(" * ", end=" ")

n = int(input('Please enter the number of rows: '))
pattern(n)
```

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')

Please enter the number of rows: >? 10

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

```
#4. Python program that displays stars in right angled triangle using
nested loops.

rows = int(input("Please Enter the Total Number of Rows  : "))
for i in range(1, rows + 1):
    for j in range(1, i + 1):
        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')

Please Enter the Total Number of Rows : >? 5

*

* *

* * *

* * * *

* * * * *

```
#5. Python program to display the star in an equilateral triangular from
using single for loop.

n=10
for i in range(1, 6):
    print(' '*n, end='')
    print('* '*(i))
    n-=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')

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

```
#6. Python program to display numbers from 1 to 100 in a proper format(in
10 rows and 10 columns).

import numpy as np

numbers = np.array([[i for i in range(1,11)],[i for i in range(11,21)],[i
for i in range(21,31)],[i for i in range(31,41)],[i for i in range(41,51)],
[i for i in range(51,61)],[i for i in range(61,71)],[i for i in
range(71,81)],[i for i in range(81,91)],[i for i in range(91,101)]])
print(numbers)
```

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 4 5 6 7 8 9 10]

 [11 12 13 14 15 16 17 18 19 20]

 [21 22 23 24 25 26 27 28 29 30]

 [31 32 33 34 35 36 37 38 39 40]

 [41 42 43 44 45 46 47 48 49 50]

 [51 52 53 54 55 56 57 58 59 60]

 [61 62 63 64 65 66 67 68 69 70]

 [71 72 73 74 75 76 77 78 79 80]

 [81 82 83 84 85 86 87 88 89 90]

 [91 92 93 94 95 96 97 98 99 100]]

```
#7. Python program to check if number is palindrome.

n = int(input("Please enter a number:"))

number = n
temp=n
rev=0
while(n>0):
    dig=n%10
    rev=rev*10+dig
    n=n//10
if(temp==rev):
    print("The number {0} is a palindrome!".format(number))
else:
    print("The number {0} isn't a palindrome!".format(number))
```

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')

Please enter a number:>? 1221

The number 1221 is a palindrome!

```
#8. Python program to display prime number series.

lower = 2
upper = int(input('Please enter the limit: '))
print("Prime numbers between", lower, "and", upper, "are:")

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

   if num > 1:
       for i in range(2, num):
           if (num % i) == 0:
               break
       else:
           print(num)
```

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')

Please enter the limit: >? 30

Prime numbers between 2 and 30 are:

2

3

5

7

11

13

17

19

23

29