

Program: Programs on Input/Output and Control Structures

1. Aim-

Write a Python program to print the following string in a specific format

Twinkle, twinkle, little star,

 "How I wonder what you are! "

 Up above the world so high,

 Like a diamond in the sky.

Twinkle, 'twinkle ', little star,

 How I wonder what you are

Using only one print() function.

Code:

```
print('Twinkle,twinke,little star \n \t "How I wonder what you are !" \n \t\t Up above the world so high,\n \t\t Like a diamond in the sky. \n Twinkle,'+"twinkle",little star, \n \t How I wonder what you are")
```

Output:

Twinkle,twinke,little star

 "How I wonder what you are !"

 Up above the world so high,

 Like a diamond in the sky.

Twinkle,'twinkle',little star,

 How I wonder what you are

2. Aim-Program to show output formatting take two values and display them using single print function using

- **str.format()**
- **% operator**

Code:

```
num1=float(input("Enter first number "))
```

```
num2=float(input("Enter second number "))
```

```
print("Using the {} placeholder operator")
```

```
print("Sum of {} and {} is {}".format(num1,num2,(num1+num2)))
```

```
print("Using the % operator")
```

```
print("Product of %.2f and %.f is %f"%(num1,num2,num1*num2))
```

Output:

Enter first number 45

Enter second number 50

Using the {} placeholder operator

Sum of 45.0 and 50.0 is 95.0

Using the % operator

Product of 45.00 and 50 is 2250.000000

3. Aim: Program to find leap year using nested if

Code:

```
print("Program to find leap year")
```

```
year=int(input("Enter a year: "))
```

```
if (year%4 == 0 ):
```

```
    if(year%100 == 0):
```

```
        if (year%400 == 0):
```

```
            print(f" Your selected year {year} is a leap year")
```

```
        else :
```

```
            print(f" Your selected year {year} is NOT a leap year")
```

```
    else :
```

```
        print(f" Your selected year {year} is a leap year")
```

```
else:
```

```
    print(f" Your selected year {year} is NOT a leap year")
```

Output:

Program to find leap year

Enter a year: 2100

Your selected year 2100 is NOT a leap year

Program to find leap year

Enter a year: 2000

Your selected year 2000 is a leap year

4. Aim- Write a Python Program to print all Armstrong number in range 1 to 1000.

Code:

```
lower=int(input("Enter lower range "))
higher=int(input("Enter higher range "))

for num in range(lower,higher+1):
    order=len(str(num))
    sum=0
    temp=num
    while temp > 0:
        digit=temp%10
        sum = sum + (digit**order)
        temp //=1
    if num==sum:
        print(num)
```

Output:

Enter lower range 1

Enter higher range 1000

1

2

3

4

5

6

7

8

9

153

370

371

407

5. Aim: Write a Python Program to find Fibonacci series of n terms.

Code:

```
n=int(input("Enter the number of terms"))
```

```
a=0
```

```
b=1
```

```
count=0
```

```
print("The Fibonacci Sequence is ")
```

```
print(a)
```

```
print(b)
```

```
while count<n:
```

```
    c=a+b
```

```
    print(c)
```

```
    a=b
```

```
    b=c
```

```
    count +=1
```

Output:

Enter the number of terms 10

The Fibonacci Sequence is

0

1

1

2

3

5

8
13
21
34
55
89

6. Aim: Write a Python Program on patterns:

```
  1
 121
12321
1234321
123454321
```

Code:

```
r=int(input("Enter the no. of rows: "))
k=0
for i in range(1,r+1):
    for space in range(1,r+1-i):
        print(' ',end='')
    for inc in range(1,i+1):
        print(inc,end='')
    for dec in range(i-1,0,-1):
        print(dec,end='')
    print()
```

Output:

Enter the no. of rows: 4

```
  1
 121
12321
1234321
```