Expriment - 1

Aim:- 1] WAP in python for the following string:-

* Twinkle Tcoinkle 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 printf () function.

[2] Program to show output formatting by taking two values and display them using.
* Str. format ():
p % operator.

(3) Program to find a leap year using nested if

(4) program to print armstrong number in range 1 to 1000.

(5) program to print fibonacci series of n terms.

(6) Patterns:-

```
A                          *  *  *  *  *          1
B  B                        *  *  *  *          1 2 1
C  C  C                      *  *  *        1 2 3 2 1
   D  D  D  D                  *  *      1 2 3 4 3 2 1
                               *
       *
   *       *
*      *        *
```

Theory:-

① print () function:-

It prints the specified function/message on the screen. The message can be string or any other object. The object will then be converted to a string before writing on the screen.

② format () function:-

The format() method formats the specified values and insert them inside the strings placeholder. The placeholder is defined by curly brackets ie {}

syntax:- String.format (values, .).

③ **% operator:-**

It is a string format command used to format strings. `%d` is used for numbers and `%s` is used for strings. They are used when the user wants to include value of python expressions into strings within a specified format.

④ **If statement:-**

Python supports usual logical conditions from Mathematics like equals, not equals, greater than, less than, etc These conditions can be tested using 'if' statement

Syntax:-   if (condition):
                    " body ":

⑦ **Elif:-**

Elif is a python way of saying " If previous condition is not true than try another one" It is same as Elseif condition in Java and C programming language.

Syntax:- elif. condition:
                    " body "

⑥ **else:-**

else keyword is executed when if condition or elif condition fails it is not compulsory followed by if.

Syntax:- else " (condr):

" body "

⑦ **Loops:-**

Python has basic 3 loops ie. for, while ~~and do while loops~~

for iterator in range (...) / list / tuple / string
" body "

while condition:
" body ";

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

Program :

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

Output :

```
PS C:\Users\krish\OneDrive\Desktop\Sem4 lab\python_lab> python -u "c:\Users\krish\OneDrive\Desktop\Sem4 lab
\python_lab\Lab codes\Expriment1\1.1_twinkle.py"
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 !"
PS C:\Users\krish\OneDrive\Desktop\Sem4 lab\python_lab>
```

2. **Program to show output formatting take two values and display them**

Program :

name = input("Enter your name : ")
rollno = int(input("Enter your Rollno : "))
# Using % operator
print(" Using % operator : ")
print("Roll no of %s is %d" %(name, rollno))
# Using string formating
print(" Using String formatting : ")
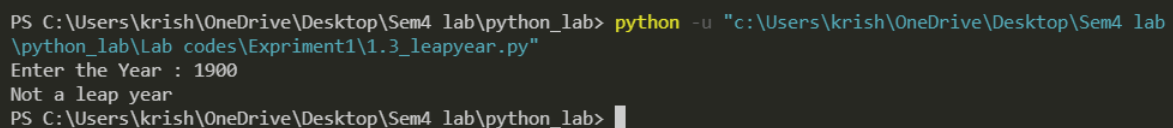print("Roll no of {} is {}".format(name, rollno))

Output :

```
PS C:\Users\krish\OneDrive\Desktop\Sem4 lab\python_lab> python -u "c:\Users\krish\OneDrive\Desktop\Sem4 lab
\python_lab\Lab codes\Expriment1\1.2_print.py"
Enter your name : krishana
Enter your Rollno : 42
 Using % operator :
Roll no of krishana is 42
 Using String formatting  :
Roll no of krishana is 42
PS C:\Users\krish\OneDrive\Desktop\Sem4 lab\python_lab>
```

Program 3 : Program to find leap year using nested if

```python
year = int(input("Enter the Year : "))
if(year % 4 == 0):
   if(year % 100 == 0):
      if(year % 400 == 0) :
         print(" It is a leap year")
      else:
         print("Not a leap year ")
   else:
      print(" It is a leap year ")

else :
   print("It is not a leap year")
```

Output :

```
PS C:\Users\krish\OneDrive\Desktop\Sem4 lab\python_lab> python -u "c:\Users\krish\OneDrive\Desktop\Sem4 lab
\python_lab\Lab codes\Expriment1\1.3_leapyear.py"
Enter the Year : 1900
Not a leap year
PS C:\Users\krish\OneDrive\Desktop\Sem4 lab\python_lab>
```

Program 4 : Program to print all armstrong number in range 1 to 1000.

```python
for i in range(1, 1000):
   sum = 0
   n = i
   while(n > 0):
      ld = n % 10
      sum += ld ** 3
      n //= 10

   if(sum == i) :
      print(i, end = " ")
```

Output :

5. Program to find fibonacci series of n terms

```
#  using reccursion
def fib(n) :
    if n <= 1 :
        return n
    else :
        return fib(n - 1 ) + fib(n - 2 )


n = int(input("Which term you want to find of fibonacci series : "))
for i in range(n) :
        print(fib(i + 1) , end = " ")
```

Output :

```
Which term you want to find of fibonacci series : 10
1 1 2 3 5 8 13 21 34 55
PS C:\Users\krish\OneDrive\Desktop\Sem4 lab\python_lab>
```

6. Program on pattern

Program :

```
# pattern 1:
row = int(input("Enter the no of rows : "))

for i in range(row) :
    for j in range(i + 1) :
        print(chr(65 + i),end = " ")
    print()

print()
print()

# pattern 2  :
for i in range(row + 1) :
```

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

# pattern 3 :
for i in range(row) :
    for j in range(row - i - 1 ):
        print(' ', end = " ")
    for j in range(i + 1) :
        print(j + 1 , end = " ")
    for j in range(i):
        print(i - j , end = " ")
    print()



# pattern 4 :

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

Output :

```
PS C:\Users\krish\OneDrive\Desktop\Sem4 lab\python_lab> python -u "c:\Users\krish\OneDrive\Desktop
1.6_patterns.py"
Enter the no of rows : 5
A
B B
C C C
D D D D
E E E E E


* * * * *
 * * * *
  * * *
   * *
    *


    1
   1 2 1
  1 2 3 2 1
 1 2 3 4 3 2 1
1 2 3 4 5 4 3 2 1

    *
   * *
  * * *
 * * * *
* * * * *
PS C:\Users\krish\OneDrive\Desktop\Sem4 lab\python_lab>
```

Conclusion : Thus we learned how in this experiment print() function ,
str.format(), how to print and take input in python , conditional statements , loop
statements and solved different type of questions .