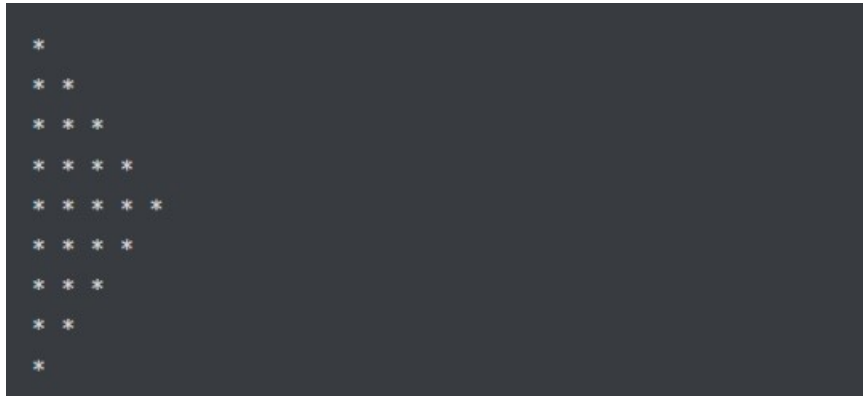


MACHINE LEARNING (CS-5710)
ASSIGNMENT - 2
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Github Link : https://github.com/priyankabojja/ML_Assignment2_ICP

QUESTION 1

Use a python code to display the following star pattern using the for loop



```
In [3]: # right pascal triangle
n = 5

# upper triangle
for i in range(n):
    for j in range(i + 1):
        print('*', end=" ")
    print()
# lower triangle
for i in range(n):
    for j in range(n - i - 1):
        print('*', end=" ")
    print()

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

In the above code snippet we printed right pascal triangle pattern. It can be clearly seen that it is made up of an upper triangle and a lower triangle. We used 2 different for loops

one which creates the upper triangle and another which creates the lower triangle.

QUESTION 2

Use looping to output the elements from a provided list present at odd indexes.

`my_list = [10, 20, 30, 40, 50, 60, 70, 80, 90, 100]`

```
In [4]: my_list = [10, 20, 30, 40, 50, 60, 70, 80, 90, 100]
        # stat from index 1 with step 2( means 1, 3, 5, an so on)
        for i in my_list[1::2]:
            print(i, end=" ")

20 40 60 80 100
```

In this code snippet we have a list named `my_list` and we know that a list index always starts at 0. Then we used for loop and printed the odd indexes in the list by increasing the index by step 2 .

QUESTION 3

Write a code that appends the type of elements from a given list.

Input

`x = [23, 'Python', 23.98]`

Expected output

`[23, 'Python', 23.98]`

`[<class 'int'>, <class 'str'>, <class 'float'>]`

```
In [5]: # Append a list with types of elements
n = [23, 'Python', 23.98]
x = []
for i in range(len(n)):
    x.append(type(n[i]))
print(n)
print(x)

[23, 'Python', 23.98]
[<class 'int'>, <class 'str'>, <class 'float'>]
```

Here in this code we used a for loop to print the type of elements from a given list using the `append()` function. `append` will append the type of elements in `n` to the list `x`.

QUESTION 4

Write a function that takes a list and returns a new list with unique items of the first list.

Sample List: [1,2,3,3,3,3,4,5]

Unique List: [1, 2, 3, 4, 5]

```
In [6]: def unique_list(l): #created the unique list function
        x = [] #created an empty list
        for a in l: #checks the elements in l
            if a not in x: #if element in l is not in x
                x.append(a) #appends the element into the list
        return x

        print(unique_list([1,2,3,3,3,3,4,5]))

[1, 2, 3, 4, 5]
```

In this code snippet we created a function for a unique list l and created another empty list x.

If the elements in list l or not in list x we will append those elements into the list to create a unique list x.

QUESTION 5

Write a function that accepts a string and calculate the number of upper-case letters and lower-case letters.

Input String: 'The quick Brow Fox'

Expected Output:

No. of Upper-case characters: 3

No. of Lower-case Characters: 12

```
In [8]: def string_test(s): #creating the function
        d={"UPPER_CASE":0, "LOWER_CASE":0}
        for c in s: #for every character in string
            if c.isupper(): #checks upper
                d["UPPER_CASE"]+=1
            elif c.islower(): #checks lower
                d["LOWER_CASE"]+=1
            else:
                pass
        print ("Original String : ", s)
        print ("No. of Upper case characters : ", d["UPPER_CASE"])
        print ("No. of Lower case Characters : ", d["LOWER_CASE"])

        string_test('The quick Brow Fox')
```

```
Original String : The quick Brow Fox
No. of Upper case characters : 3
No. of Lower case Characters : 12
```

In this code snippet we created a function to accept a string 's' and will check each character in the given string if the character is in upper or lower case and prints number of upper and lower case characters in a given string.