Machine Learning – Assignment 2

CS 5710 (CRN 22002)

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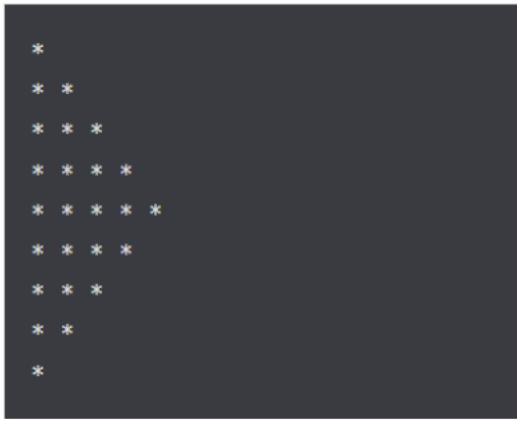
Code outputs are shared and explained in zoom breakout room, hence no video attached.

1. This program adds and removes "*" to a string as per the loop and conditional statements and print the pattern below.



In [53]:

```
#intialzie program vairables
s = ""
for x in range(9):
    #for first five iteration append *
    if (x<5):
        s = s + "*"

    #rest iterantion remove a * at the end
    else:
        s = s[:-1]
    print(s)
```

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

2. This program loops through the indexes of the given list and prints only the values that has odd numbered index. To find odd numbered index we use modulo function here.

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

         #loop through the idexes of the list
         for i in range(len(my_list)):

             #print only values at odd indexes
             if (i%2 != 0):
                 print(my_list[i])
```

```
20
40
60
80
100
```

3. This program finds the type of values in the given list and append the type in a new list.

```
In [35]: #given list
         x = [23, 'Python', 23.98]
         #create an empty list to store the type values
         type_x_list = []

         #loop through the given list and append the type of each list value to new list
         for i in x:
             type_x_list.append(type(i))

         print(x)
         print(type_x_list)
```

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

4. This program creates function that takes a list and input and return the unique values of the input list as output.

```
In [51]: #sample input list
         sample_list =  [1,2,3,3,3,3,4,5]

         #create a fuction which take a list as input and returns a output list
         def getUniqueList(input_list):
             #type cast list to set to get the unique values
             output_list = list(set(input_list))
             return output_list

         unique_list = getUniqueList(sample_list)
         print("Unique List:",unique_list )
```

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

5. This program creates a function that takes a string as input, finds the count of lower case and upper case letters in the string and returns the count of lower case and upper case characters. As the function returns two values, they are assigned to corresponding variables when the function is called and printed in the output.

In [52]:

```
given_string = "The quick Brow Fox"
#create a function that gets the input string and returns the case count
def getCaseCount(input_str):
    lowerCount = 0
    upperCount = 0
    #loop through the chars in the input sting
    for x in given_string:
        #ignore space between words
        if (x != " "):
            if(x.islower()):
                lowerCount += 1
            else:
                upperCount += 1
    return lowerCount,upperCount

lowerCaseCount,upperCaseCount = getCaseCount(given_string)
print("No. of Upper Case Characters:",upperCaseCount)
print("No. of Lower Case Characters:",lowerCaseCount)
```

```
No. of Upper Case Characters: 3
No. of Lower Case Characters: 12
```