**GitHub Link:** https://github.com/sxn01020/In-Class-Programming-Assignment2.git

**Question1:**

```
#using for loop to print the *
for i in range(1,6):
    #prinitng *'s
    print("* "*i)
    #when the range reaches the highest level it will start decreasing and print *
    if i==5:
        while i!=0:
            i-=1
            print("* "*i)
        exit
```

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

**Explanation:**

1. Taking the range of values starting from 1 and ending with 5, printing the * until 5.
2. Once it reaches 5 then printing the * in descending order using while loop until it reaches 1.
3. Exiting the loop once done.

**Question2:**

```
In [23]: #Input list of elements
         my_list=[10,20,30,40,50,60,70,80,90,100]

         #Using step in range of 1 to length of input list to get the odd indexes
         for i in range(1,len(my_list),2):
             print(my_list[i])
```

```
20
40
60
80
100
```

**Explanation:**

1. Taking the input list and using the range and step value 2, taking the values present in odd indexes from 1 to length of the input list and printing those values.

**Question3:**

In [28]:
```
#input list
x=[23,'Python',23.98]

#creating an empty list to append the type of the elements from the input list
y=[]

#using for loop to append the type of each element
for i in x:
    y.append(type(i))

#printing the input list and the list containing type of each element
print(x)
print(y)
```

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

**Explanation:**

1. Taking the input list and then creating an empty list.
2. Looping the values from the input list and then appending the type of each value into the empty list.
3. Printing the input list and list with the type of each value from the list.

**Question4:**

In [33]:
```
#function to return unique list
def fun(sample_list):
    #using set to get the unique values
    set1=set(simple_list)
    #creating a list from the set
    unique_list=list(set1)
    #returning the unique elements from the input list
    return unique_list

#input list
simple_list=[1,2,3,3,3,3,4,5]
#calling the function and passing the input list as an argument and taking the output returned by the function
unique_list=fun(simple_list)

#prinitng the unique list
print(unique_list)
```

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

**Explanation:**

1. Creating a function that returns a unique list using set.
2. Taking the input list and passing the list to the function.
3. Taking the list returned from the function and printing this returned list that contains unique values.

**Question5:**

In [39]:
```
#function to return number of lower-case and upper-case characters from the input string
def fun1(string):
    #creating lower and upper lists
    upper=[]
    lower=[]
    #taking each character from the string and checking if it is lower-case or upper-case and appending to its lower or upper lis
    for i in string:
        if i.isupper():
            upper.append(i)
        elif i.islower():
            lower.append(i)
    #returning the lower-case and upper-case charcater lists
    return upper,lower

#input string
string="The quick Brow Fox"
#calling the function and passing the input string as an argument to the function and taking the output returned by the function
upper,lower=fun1(string)

#printing the number of lower-case and upper-case characters from the input string
print("No:of Upper-case characters: ",len(upper))
print("No:of Lower-case Characters: ",len(lower))
```

```
No:of Upper-case characters:  3
No:of Lower-case Characters:  12
```

**Explanation:**

1. Creating a function that returns two lists containing upper-case and lower-case characters.
2. Passing the input string to this function and taking the lists that are returned by the function and printing the length of each list to know the number of upper-case and lower-case characters present in the input string.