

# ML ASSIGNMENT 1

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**Git hub:** [https://github.com/Nishitreddy/machine\\_learning.git](https://github.com/Nishitreddy/machine_learning.git)

### Question1

```
for i in range(0, 5):
    for j in range(0, i + 1):
        print("* ", end="")
    print("\n") #\r is a carriage return so we use \r instead of \n
```

```
#This half of the program helps to print the pattern for the next half in decreasing order
for i in range(5, 0, -1):
    for j in range(0, i -1):
        print("* ", end="")
    print("\r") #\r is a carriage return so we use \r instead of \n
```

The image shows a Windows laptop screen with the Visual Studio Code editor open. The editor window displays a Python file named 'Question1.py' with the following code:

```
1 #Wishit Reddy Lingala
2 #ID: 700747128
3 #ith loop is used to travel the number of columns
4 #jth loop is used to travel the number of stars in column
5
6
7 #First half helps to print the pattern upto 5 lines in increasing order
8 for i in range(0, 5):
9     for j in range(0, i + 1):
10         print("* ", end='')
11     print("\r") #\r is a carriage return so we use \r instead of \n
12
13
14
15 #This half of the program helps to print the pattern for the next half in decreasing order
16 for i in range(5, 0, -1):
17     for j in range(0, i - 1):
18         print("* ", end='')
19     print("\r") #\r is a carriage return so we use \r instead of \n
```

The terminal window on the right shows the command prompt with the command `PS C:\Users\imnis> & C:/Users/imnis/AppData/Local/Programs/python/python310/python.exe "f:/UCM/Machine Learning/Assignments/Assignment2/Question1.py"` and the output of the program, which is a pattern of stars. The status bar at the bottom of the editor shows 'Ln 1, Col 1', 'Spaces: 4', 'UTF-8', 'CRLF', 'Python', '3.10.4 64-bit', and '2:03 PM 2/3/2023'. The Windows taskbar at the bottom of the screen shows the Start button, a search bar, and several open applications including File Explorer, Edge, and the Visual Studio Code icon.

Explanation:

#ith loop is used to travel the number of columns

#jth loop is used to travel the number of stars in column

#First half helps to print the pattern upto 5 lines in increasing order

#\r is a carriage return so we use \r instead of \n

#Second half of the program helps to print the pattern for the next half in decreasing order

## Question2

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

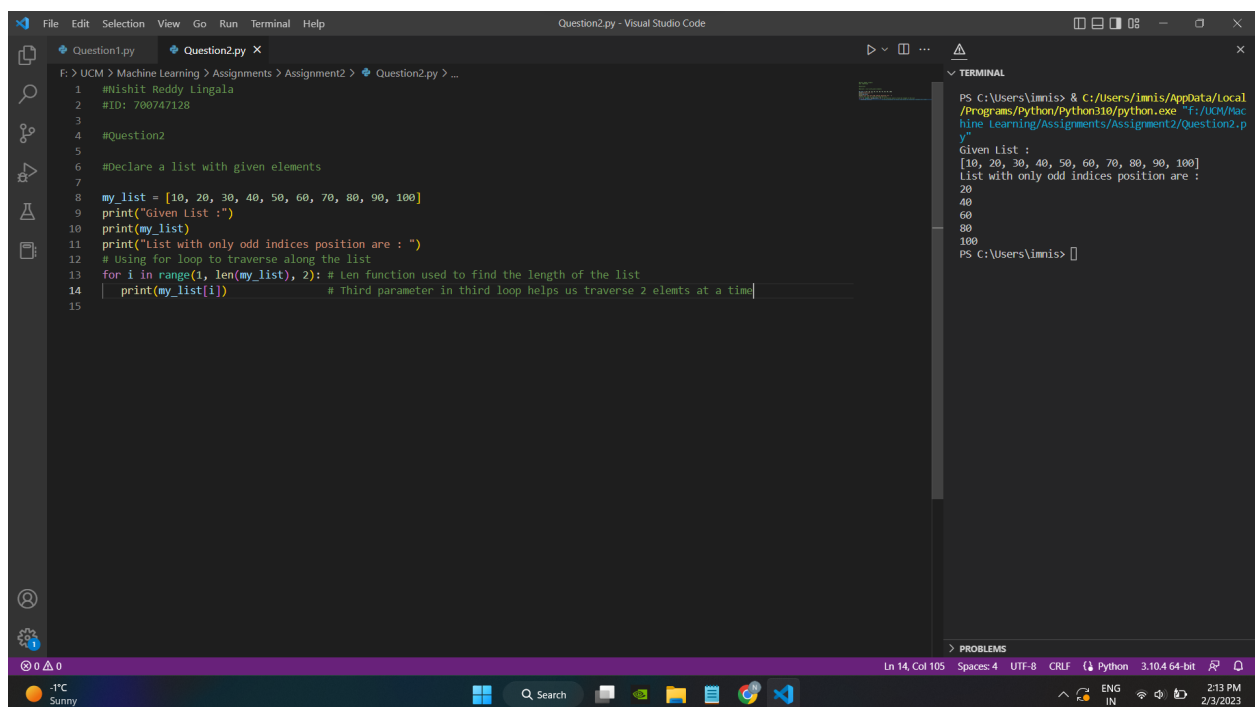
```
print("Given List :")
```

```
print(my_list)
```

```
print("List with only odd indices position are : ")
```

```
for i in range(1, len(my_list), 2):
```

```
    print(my_list[i])
```



The screenshot shows a Visual Studio Code window with a file named 'Question2.py'. The code in the editor is as follows:

```
1 #Nishit Reddy Lingala
2 #ID: 700747128
3
4 #Question2
5
6 #Declare a list with given elements
7
8 my_list = [10, 20, 30, 40, 50, 60, 70, 80, 90, 100]
9 print("Given List :")
10 print(my_list)
11 print("List with only odd indices position are : ")
12 # Using for loop to traverse along the list
13 for i in range(1, len(my_list), 2): # Len function used to find the length of the list
14     print(my_list[i])               # Third parameter in third loop helps us traverse 2 elems at a time
15
```

The terminal on the right shows the output of the script:

```
PS C:\Users\imnis> & C:/Users/imnis/AppData/Local/Programs/Python/Python310/python.exe "F:/UCM/Machine Learning/Assignments/Assignment2/Question2.py"
Given List :
[10, 20, 30, 40, 50, 60, 70, 80, 90, 100]
List with only odd indices position are :
20
40
60
80
100
PS C:\Users\imnis>
```

Explanation:

#Declare a list with given elements

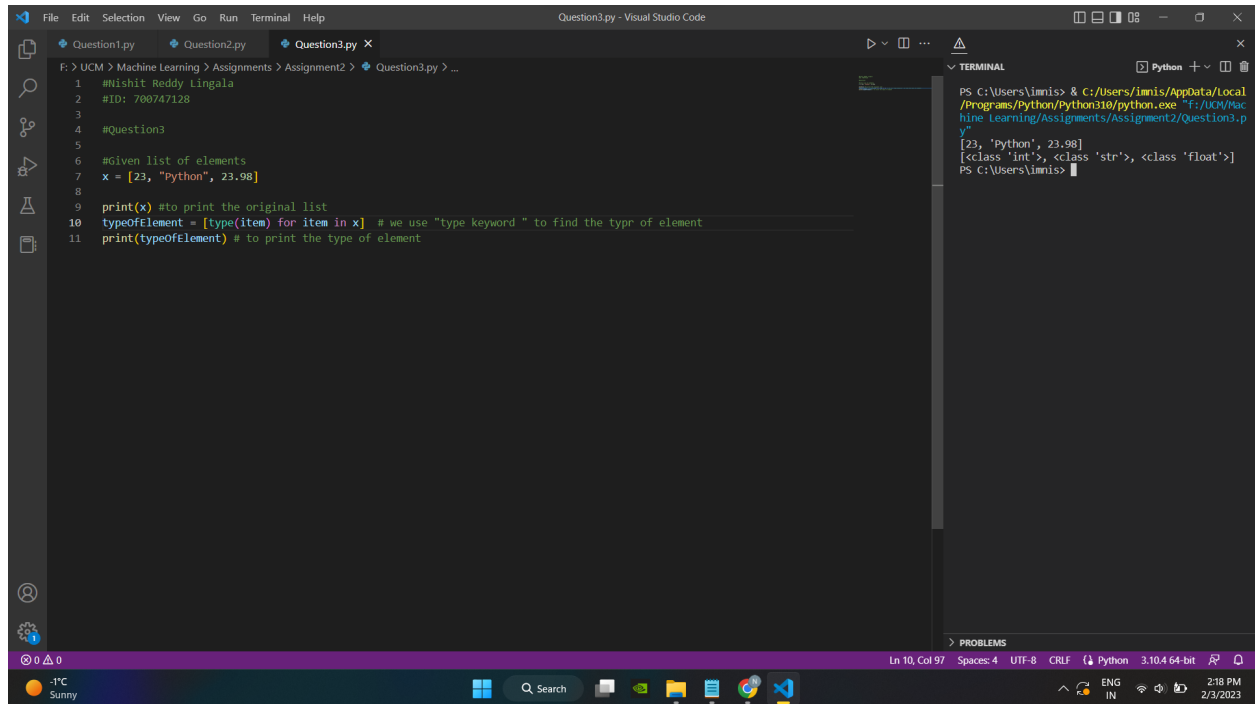
# Using for loop to traverse along the list

# Len function used to find the length of the list

# Third parameter in third loop helps us traverse 2 elemnts at a time

### Question3

```
x = [23, "Python", 23.98]
print(x)
typeOfElement = [type(item) for item in x]
print(typeOfElement)
```



The screenshot shows a Visual Studio Code window with a file named 'Question3.py'. The code in the editor is as follows:

```
1 #Nishit Reddy Lingala
2 #ID: 700747128
3
4 #Question3
5
6 #Given list of elements
7 x = [23, "Python", 23.98]
8
9 print(x) #to print the original list
10 typeOfElement = [type(item) for item in x] # we use "type keyword " to find the typ of element
11 print(typeOfElement) # to print the type of element
```

The terminal output on the right shows the execution of the script:

```
PS C:\Users\imnis> & C:/Users/imnis/AppData/Local/Programs/Python/Python310/python.exe "f:/UCM/Machine Learning/Assignments/Assignment2/Question3.py"
[23, 'Python', 23.98]
[<class 'int'>, <class 'str'>, <class 'float'>]
PS C:\Users\imnis>
```

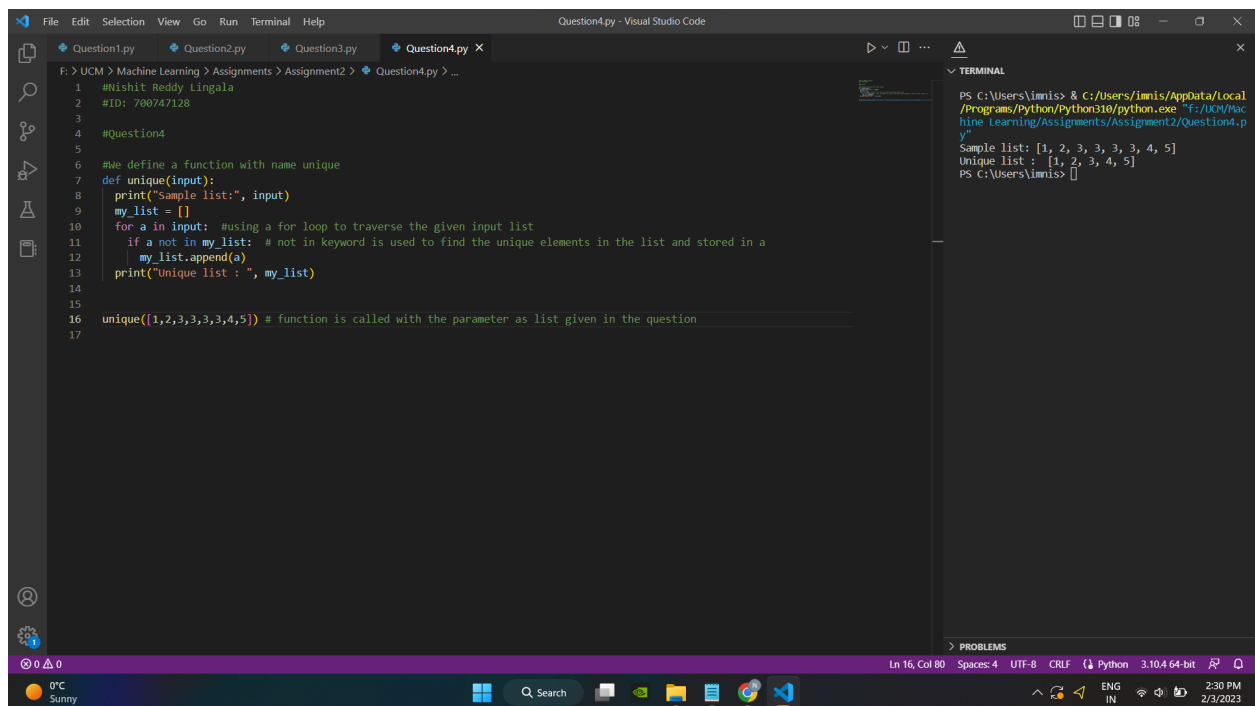
The status bar at the bottom indicates the file is at Line 10, Column 97, with 4 spaces, UTF-8 encoding, and CRLF line endings. The system tray shows a temperature of -1°C and a sunny weather icon.

### Explanation:

- # We are used to find the type of elements in the list
- # We use “type” keyword to find the data type of the elements.
- # Store in a variable named typeOfElement and print it.

## Question4

```
def unique(input):  
    print("Sample list:", input)  
    my_list = []  
    for a in input:  
        if a not in my_list:  
            my_list.append(a)  
    print("Unique list : ", my_list)  
unique([1,2,3,3,3,3,4,5])
```



The screenshot shows the Visual Studio Code interface with a file named 'Question4.py' open. The code in the editor is as follows:

```
1 #Nishit Reddy Lingala  
2 #ID: 700747128  
3  
4 #Question4  
5  
6 #We define a function with name unique  
7 def unique(input):  
8     print("Sample list:", input)  
9     my_list = []  
10    for a in input: #using a for loop to traverse the given input list  
11        if a not in my_list: # not in keyword is used to find the unique elements in the list and stored in a  
12            my_list.append(a)  
13    print("Unique list : ", my_list)  
14  
15  
16 unique([1,2,3,3,3,3,4,5]) # function is called with the parameter as list given in the question  
17
```

The terminal on the right shows the output of the script:

```
PS C:\Users\imnis> & C:\Users\imnis\AppData\Local  
/Programs/Python/Python310/python.exe "F:\UCM\mac  
hine Learning/Assignments/Assignment2/Question4.p  
y"  
Sample list: [1, 2, 3, 3, 3, 3, 4, 5]  
Unique list : [1, 2, 3, 4, 5]  
PS C:\Users\imnis>
```

The status bar at the bottom indicates the file is at line 16, column 80, with 4 spaces, UTF-8 encoding, and CRLF line endings. The system tray shows the date as 2/3/2023 and time as 2:30 PM.

## Explanation:

#We define a function with name unique

#using a for loop to traverse the given input list

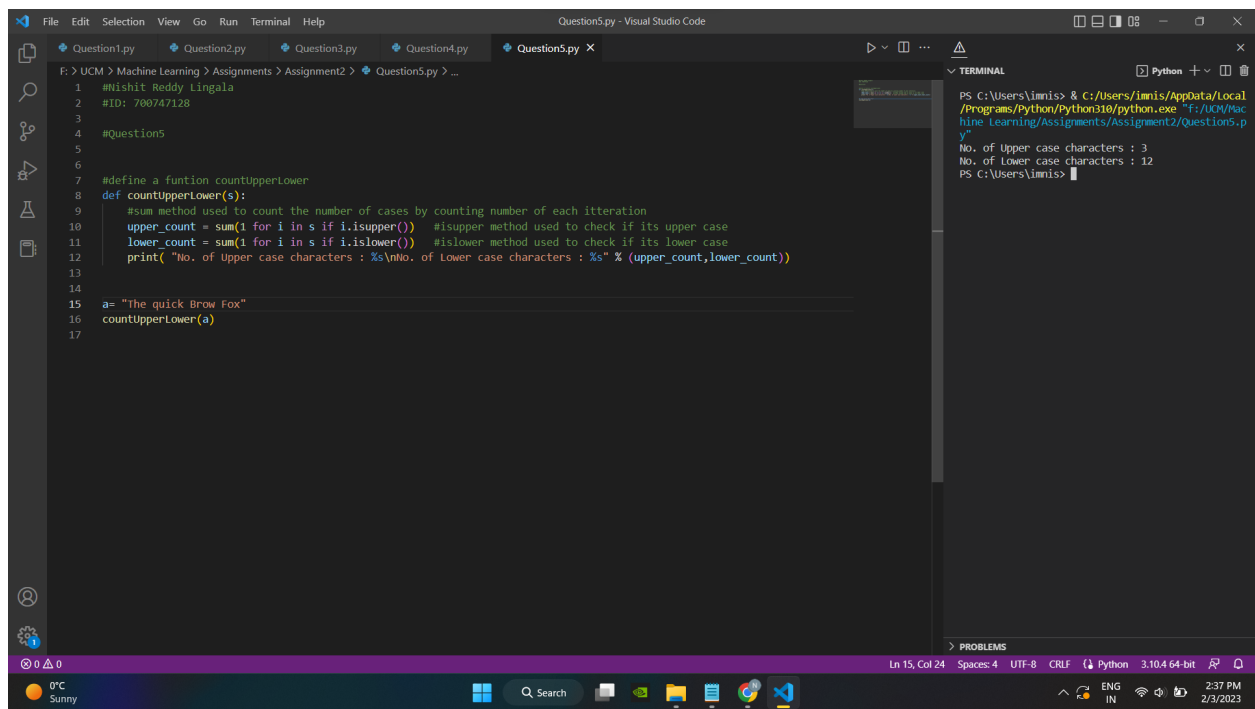
# not in keyword is used to find the unique elements in the list and stored in a

# function is called with the parameter as list given in the question

## Question5

```
def countUpperLower(s):  
    upper_count = sum(1 for i in s if i.isupper())  
    lower_count = sum(1 for i in s if i.islower())  
    print("No. of Upper case characters : %s\nNo. of Lower case characters : %s" %  
(upper_count,lower_count))
```

```
a= "The quick Brow Fox"  
countUpperLower(a)
```



The screenshot shows the Visual Studio Code interface. The editor window displays a Python file named 'Question5.py' with the following code:

```
1 #Nishit Reddy Lingala  
2 #ID: 700747128  
3  
4 #Question5  
5  
6  
7 #define a function countUpperLower  
8 def countUpperLower(s):  
9     #sum method used to count the number of cases by counting number of each iteration  
10    upper_count = sum(1 for i in s if i.isupper()) #isupper method used to check if its upper case  
11    lower_count = sum(1 for i in s if i.islower()) #islower method used to check if its lower case  
12    print("No. of Upper case characters : %s\nNo. of Lower case characters : %s" % (upper_count,lower_count))  
13  
14  
15 a= "The quick Brow Fox"  
16 countUpperLower(a)  
17
```

The output of the program is displayed in the terminal window:

```
PS C:\Users\imnis> & C:/Users/imnis/AppData/Local/Programs/Python/Python310/python.exe "F:/UCM/Machine Learning/Assignments/Assignment2/Question5.py"  
No. of Upper case characters : 3  
No. of Lower case characters : 12  
PS C:\Users\imnis>
```

## Explanation:

#define a function countUpperLower

#sum method used to count the number of cases by counting number of each iteration

#isupper method used to check if its upper case

#islower method used to check if its lower case