	ITER, SIKSHA 'O' ANUSANDHAN (Deemed to be University)		Assignment
Branch	**CAIML**	Programme	**B. Tech**
Course Name	**Security and Networking with Python**	Semester	**IV**
Course Code	**CSE 2157**	Academic Year	**2023-24**
Assignment- 5		**Topic: String, List, Tuple, Set and array**	
Learning Level (LL)	**L1**: Remembering	**L3:** Applying	**L5**: Evaluating
	L2: Understanding	**L4**: Analysing	**L6**: Creating

Q's	Questions	Cos	LL
1	Count the number of each character present (character frequency) in a string using python code. Input String : gmail.com' Output : {'g': 1, 'm': 2, 'a': 1, 'i': 1, 'l': 1, 'c': 1,'o':1 }	**CO2**	**L2, L3**
2	Print first 2 and last 2 characters from a string using python. If the string length is less than 2, return the "empty string". Input String : 'Good bye' Output : 'Goye' Input String: 'Hi' Output : 'HiHi' Input String : ' N' Output : Empty String	**CO2**	**L3**
3	Write a Python program to get a string from a given string where all occurrences of its first char have been changed to '$', except the first char itself. Sample String : 'restart' Expected Result : 'resta$t'	**CO2**	**L3**
4.	Write a Python program to add 'ing' at the end of a given string (length should be at least 3). If the given string already ends with 'ing', add 'ly' instead. If the string length of the given string is less than 3, leave it unchanged. Sample String : 'abc' Expected Result : 'abcing' Sample String : 'string' Expected Result : 'stringly'	**CO2**	**L3**
5.	Write a Python function that takes a list of words and return the longest word and the length of the longest one. Sample Output: Longest word: Exercises Length of the longest word: 9	**CO2**	**L2, L3**
6.	Write a Python function to get a string made of the first three characters of a specified string. If the length of the string is less than 3, return the original string. Sample function and result : first_three('ipy') -> ipy first_three('python') -> pyt	**CO2**	**L3**
7.	Write a Python program to count the number of strings from a given list of strings. The string length is 2 or more and the first and last characters are the	**CO2**	**L3**

	same. Sample List : ['abc', 'xyz', 'aba', '1221'] Expected Result : 2		
8.	Write a Python program to get a list, sorted in increasing order by the last element in each tuple from a given list of non-empty tuples. Sample List : [(2, 5), (1, 2), (4, 4), (2, 3), (2, 1)] Expected Result : [(2, 1), (1, 2), (2, 3), (4, 4), (2, 5)]	**CO3**	**L3**
9.	Write a Python program to print a specified list after removing the 0th, 4th and 5th elements. Sample List : ['Red', 'Green', 'White', 'Black', 'Pink', 'Yellow'] Expected Output : ['Green', 'White', 'Black']	**CO3**	**L3**
10.	Write a Python program to check if each number is prime in a given list of numbers. Return True if all numbers are prime otherwise False. Sample Data: ([0, 3, 4, 7, 9]) -> False ([3, 5, 7, 13]) -> True ([1, 5, 3]) -> False	**CO3**	**L3**
11.	Write a Python program to replace the last value of tuples in a list. Sample list: [(10, 20, 40), (40, 50, 60), (70, 80, 90)] Expected Output: [(10, 20, 100), (40, 50, 100), (70, 80, 100)]	**CO3**	**L3**
12.	Write a Python program to remove an empty tuple(s) from a list of tuples. Sample data: [(), (), ('',), ('a', 'b'), ('a', 'b', 'c'), ('d')] Expected output: [('',), ('a', 'b'), ('a', 'b', 'c'), 'd']	**CO3**	**L3**
13.	Write a Python program to sort a tuple by its float element. Sample data: [('item1', '12.20'), ('item2', '15.10'), ('item3', '24.5')] Expected Output: [('item3', '24.5'), ('item2', '15.10'), ('item1', '12.20')]	**CO3**	**L2, L3**
14.	Write a Python program to sort a tuple by its float element. Sample data: [('item1', '12.20'), ('item2', '15.10'), ('item3', '24.5')] Expected Output: [('item3', '24.5'), ('item2', '15.10'), ('item1', '12.20')]	**CO3**	**L2, L3**
15.	Write a Python program to check whether it follows the sequence given in the patterns array. Pattern example: For color1 = ["red", "green", "green"] and patterns = ["a", "b", "b"] the output should be samePatterns(color1, patterns) = true; For color2 = ["red", "green", "greenn"] and patterns = ["a", "b", "b"] the output should be samePatterns (strings, color2) = false.	**CO3**	**L3**
16.	Write a Python program to find a pair with the highest product from a given array of integers. Original array: [1, 2, 3, 4, 7, 0, 8, 4] Maximum product pair is: (7, 8) Original array: [0, -1, -2, -4, 5, 0, -6] Maximum product pair is: (-4, -6)	**CO3**	**L3**
17.	Write a Python program to check whether it follows the sequence given in the patterns array. Pattern example: For color1 = ["red", "green", "green"] and patterns = ["a", "b", "b"] the output should be samePatterns(color1, patterns) = true; For color2 = ["red", "green", "greenn"] and patterns = ["a", "b", "b"] the output should be samePatterns (strings, color2) = false. Click me to see the sample solution	**CO3**	**L3**
18.	Write a Python program to find a pair with the highest product from a given array of integers. Original array: [1, 2, 3, 4, 7, 0, 8, 4] Maximum product pair is: (7, 8) Original array: [0, -1, -2, -4, 5, 0, -6] Maximum product pair is: (-4, -6)	**CO3**	**L3**