

## Lab Assignment 4

### A Gentle Introduction to Python (CCC634)

Max Marks (5 marks = 3 marks (lab evaluation) + 2 marks (Submission on Blackboard))

Deadline: 14-02-2024 (11:55 PM)

1. Create a list by taking input from the user. First input is the no. of elements you want to add in the list and second input is the elements. Create a new list which is reverse of the existing list. First output should be existing list and second output should be resultant list.
2. Create a list which consists of only integer values by taking input from the user. Take first input as the number of elements you want to add in the list and second input as the elements in the list. Write a program to create a new list where each element value is the square of elements of the existing list.
3. Create a list by taking input from the user. Take the first input as the number of elements to be added in the list, second input as the elements in the list and the third input as an element to be searched in the list. Search the first occurrence of an element named elem in the list. When found print the index position where it is found and replace elem with the result of the addition of the value 1000. If the element is not found in the list then print the message "The element you are searching for is not in the list".
4. Create a list by entering the items separated by space. (only integer values). Write a program to find if the contents are palindrome. If while reading the element values in the list, it is found that front to end and end to front, the elements are read as same, then print: Yes, otherwise print not palindrome.
5. Create a list by taking input from the user and which consists of only integer values.. First input is the size of the list and second input is the elements in the list. Print the product of the list as output.
6. You have given a list of students of a batch. You have to check whether the student is part of the batch or not. Write a Python program to check whether a student is in a batch or not.

Format Input:

Student list: ram shyam

Name of student: ram

7. Create a list named 'list1' by taking input from the user. The list consists of only integer values. A mapping function  $F(x)=x^3+2x-5$  is applied on list1, and the output is saved in list2. Create list2 where the mapped value is saved. Display list1 and list2.
8. Alice and Bob are meeting after a long time. As usual they love to play some math games. This times Alice takes the call and decides the game. The game is very simple, Alice says out an integer and Bob has to say whether the number is prime or not. Help

Bob accomplish this task by writing a python program which will calculate whether the number is prime or not.

9. You are given 10 numbers. Write a program to input integers in numbers list and create two lists "Positive" and "Negative" where "Positive" contains only the positive numbers and "Negative" contains only the negative numbers.
10. Create a list by taking input from the user and which consists of only integer values. First input is the number of elements, second is elements and third input is integer value named power. Suppose the list created by us, has elements like elem1, elem2 ... and so on. Create a resultant list where each element value is modified as following:  
[ elem1<sup>power</sup> , elem2<sup>power</sup> , elem3<sup>power</sup>,...]
11. You are building an online shopping cart. Implement a program that checks if a product is in the cart using a list.