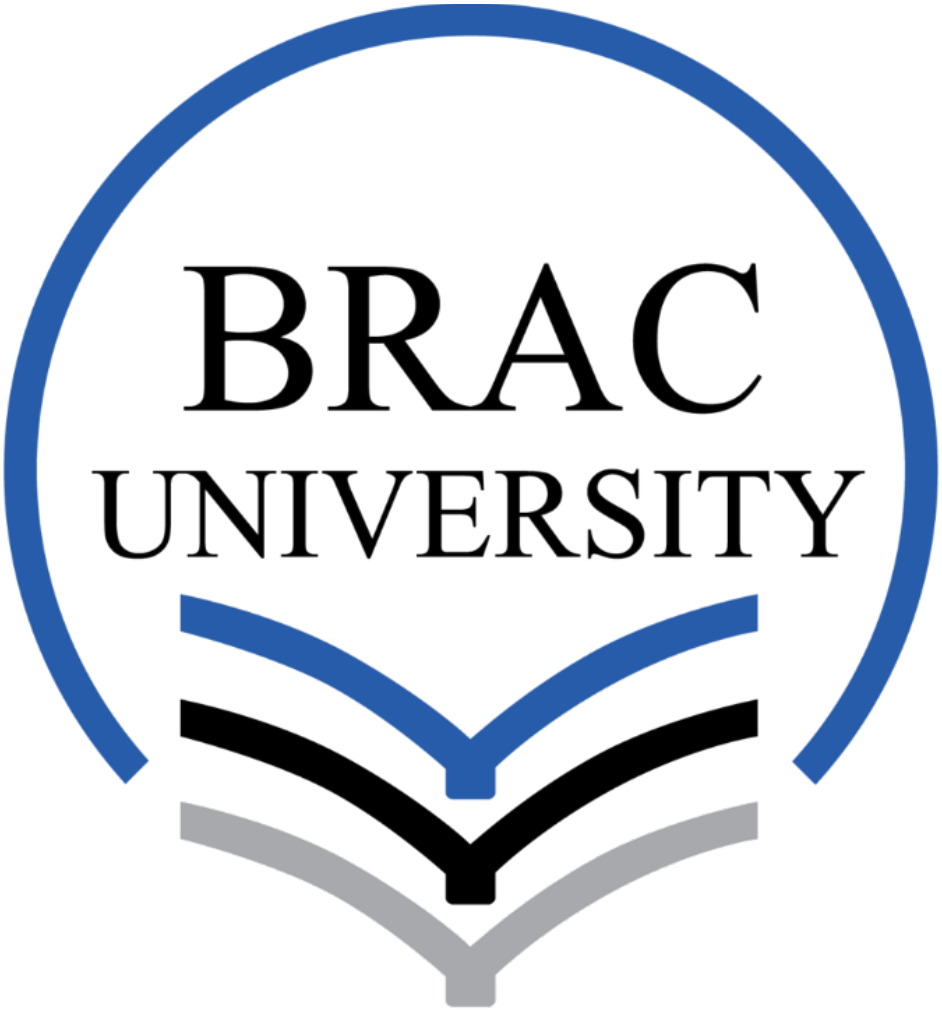

Inspiring Excellence

Course Title: Programming Language II
Course Code: CSE 111
Semester: Summer 2020
Assignment no: 4
Topic: List

Easy

1. Write a python program that reads 10 numbers from the user, and then prints them in the reverse order.

2. Write a Python program that replaces the last element in a list with another list. (Input list elements should be separated by comma)

Sample Input
1, 3, 5, 7, 9, 10
2, 4, 6, 8

Sample Output
[1, 3, 5, 7, 9, 2, 4, 6, 8]

3. Write a python program that reads 10 numbers from the user, but does not allow the user to enter duplicates. This means that if a number has been entered already, the program will not accept it as input again and instead ask the user to enter a different number.

Medium

1. Write a python program which prints the frequency of the numbers that were given as input by the user. Stop taking input when you find the string "STOP". **Do not print the frequency of numbers that were not given as input.**

Sample Input
10
20
20
30
10
50
90
STOP

Sample Output
10 - 2 times
20 - 2 times
30 - 1 times
50 - 1 times
90 - 1 times

2. Write a python program that calculates the sum of N given lists and prints the highest sum and its respective list. Input starts with N and followed by N lists.

Sample Input
4
1 2 3
4 5 6
10 11 12
7 8 9

Sample Output
33
[10,11,12]

3. Write a python program that prints a list which contains cross multiplication between two given lists.

Sample Input
2 3 6
3 4 5

Sample Output
[6,8,10,9,12,15,18,
24,30]

4. Write a Python program to split a list by taking every Nth element. Input will start with N and followed by the list of elements. [Input list should be separated by comma]

   Explanation: if the first input is three there will be three list in the output. If the input is 4 there will be 4 list. For the given sample input and output, the first input is 3 so in output there will be 3 lists. The first element of the first list is the first character, the first element of the second list is the second character, first element of the third list is the third character. Then the next character goes to the first list, next to the next character in the second list and so on.

Sample Input

3

a, b, c, d, e, f, g, h, i, j, k, l, m, n

Sample Output

[['a', 'd', 'g', 'j', 'm'], ['b', 'e', 'h', 'k', 'n'], ['c', 'f', 'i', 'l']]

Hard

1. Let there are N numbers in a list and that list is said to be a UB Jumper if the absolute values of the difference between the successive elements take on all the values 1 through N − 1. For example, 2 1 4 6 10 is a UB Jumper because the absolute differences between them are 1 3 2 4 which is all numbers from 1 to (5 - 1) or 4. **Write a python program that takes a number sequence as input and prints whether it is a UB Jumper or Not UB Jumper. Input will stop after getting "STOP" as input.** (Number order or absolute difference order doesn't follow any sequence.)

Sample Input

1 4 2 3
2 1 4 6 10
1 4 2 -1 6
STOP

Sample Output

UB Jumper
UB Jumper
Not UB Jumper

2. You are given a string that contains alphanumeric characters only. Your task is to sort the string in the following manner:
    a. All sorted lowercase letters are ahead of uppercase letters.
    b. All sorted uppercase letters are ahead of digits.
    c. All sorted odd digits are ahead of sorted even digits.

Sample Input	Sample Output
Bracu1234	acruB1324

3. BRACU has n students who are regular competitive programmers. According to the ACM ICPC rules, each person can participate in the regional championship at most 5 times.

The head of the BRACU ACM Chapter is recently gathering teams to participate in this championship. Each team must consist of exactly three people, at that, any person cannot be a member of two or more teams. What maximum number of teams can the head make if he wants each team to participate in the world championship with the same members at least k times?

The first line of input contains two integers, n and k. The next line contains n integers: $y_1, y_2, \ldots, y_n$ $(0 \leq y_i \leq 5)$, where y_i shows the number of times the i-th person participated in the ACM ICPC Regional .

Write a python program that prints how many teams can be formed according to the above problem statement.

Sample Input 1	Sample Output 1
5 2 0 4 5 1 0	1
Sample Input 2	Sample Output 2
6 4 0 1 2 3 4 5	0
Sample Input 3	Sample Output 3
6 5 0 0 0 0 0 0	2