Objective: At the end of this lab, you will be able to use lists and its functions effectively to solve problems.

In-class exercises

You should have time to finish at least the following exercises in class.

1. Write a program that accepts a comma separated sequence of words as input and prints the words in a comma-separated sequence after sorting them alphabetically. Suppose the following input is supplied to the program: "without,hello,bag,world"
Then, the output should be: "bag,hello,without,world"

2. Write a function which takes 2 digits, X,Y as input and generates a 2-dimensional array. The element value in the i-th row and j-th column of the array should be i*j. Note: i=0,1.., X-1; j=0,1,¡-Y-1.

Example: Suppose the following inputs are given to the function: 3,5
Then, the output of the program should be:

[[0, 0, 0, 0, 0],

[0, 1, 2, 3, 4],

[0, 2, 4, 6, 8]]

3. Define a function which can generate a list where the values are square of numbers between 1 and 100 (both included). Then print the last 5 elements in the list.

Hints:

- Use ** operator to get power of a number.
- Use range() for loops.
- Use list.append() to add values into a list.
- Use [n1:n2] to slice a list

4. Write a program which can filter even numbers in a list by using filter function. An example list is: [1,2,3,4,5,6,7,8,9,10].

5. Write a program to make a list whose elements are square of even number in [1,2,3,4,5,6,7,8,9,10].

Home works

6. Use a list comprehension to square each odd number in a list. The list is input by a sequence of comma-separated numbers.

Suppose the following input is supplied to the program:

1,2,3,4,5,6,7,8,9

Then, the output should be:

1,9,25,49,81