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**CSC121 PYTHON Programming**

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LAB 06 **LISTS [PART 2]**

# Objectives

In this lab assignment, students will learn:

- How to use for statements to iterate over lists

- How to use the range function

- How to write code to copy and concatenate lists

- How to create and use nested lists

- How to create and use tuples

# Goals

In this lab assignment, students will demonstrate the abilities to:

- Use for statements to iterate over lists

- Use the range function

- write code to copy and concatenate lists

- Create and use nested lists

- Create and use tuples

# Instruction and Problems

Write a Python program for each of the problems in this lab. Please use PyCharm to type and test your programs. Submit the Python files to Blackboard for credit. In this lab, you should submit 5 Python files, one for each problem.

## Problem 1

A real estate agent earns 3% commission for every house he sells. Write a Python program to do the following:

1. Ask the user to enter the number of houses the real estate agent has sold.
2. Use a for loop to get the prices of the houses. Store the prices in a list.
3. Use a for loop to display price and commission earned for each house.

The following is an example:

How many houses are sold? 4

Enter price of a house: 250000

Enter price of a house: 200000

Enter price of a house: 180000

Enter price of a house: 300000

House price: 250000 Commission: 7500.0

House price: 200000 Commission: 6000.0

House price: 180000 Commission: 5400.0

House price: 300000 Commission: 9000.0

Save your Python program in a file named **Lab06P1.py**. Submit the file to Blackboard for credit.

## Problem 2

Write a Python program to do the following:

1. Use the range function to generate this sequence of integers: 2, 3, 4, 5. Save the sequence in a list.
2. Use the range function to generate this sequence of integers: 2, 5, 8, 11. Save the sequence in a list.
3. Use the range function to generate this sequence of integers: 9, 7, 5, 3. Save the sequence in a list.
4. Concatenate the three lists created in parts (a), (b) and (c) into a one list. Write a for loop to display each element of the combined list in a separate line.

The following is the expected output:

Elements in the combined list:

2

3

4

5

2

5

8

11

9

7

5

3

Save your Python program in a file named **Lab06P2.py**. Submit the file to Blackboard for credit.

## Problem 3

Write a Python program to do the following:

1. Create a list named list1 to store this sequence of numbers: 4, 7, 5, 8, 1, 2, 6, 3.
2. Create a list named list2. Copy all elements of list1 to list2. Display list2.
3. Create a list named list3. Copy the first 4 elements of list1 to list3. Display list3.
4. Create a list named list4. Copy the last 4 elements of list1 to list4. Display list4.

The following is the expected output:

List2: [4, 7, 5, 8, 1, 2, 6, 3]

List3: [4, 7, 5, 8]

List4: [1, 2, 6, 3]

Save your Python program in a file named **Lab06P3.py**. Submit the file to Blackboard for credit.

## Problem 4

Three gymnasts, Amy, Beth and Connie, compete in a meet. Each gymnast receives two scores from the judges. Write a program to do the following.

1. Ask the user to enter six scores: two scores for each gymnast.
2. Create a list named scores. This is a list of lists. It has three elements. The first element is the list of Amy’s scores. The second element is the list of Beth’s score. The third element is the list of Connie’s score.
3. Display every score stored in the list scores in a separate line.

The following is an example.

Enter first score of Amy: 14.7

Enter second score of Amy: 14.3

Enter first score of Beth: 13.6

Enter second score of Beth: 12.5

Enter first score of Connie: 12.9

Enter second score of Connie: 12.8

Scores of Amy:

14.7

14.3

Scores of Beth:

13.6

12.5

Scores of Connie:

12.9

12.8

Save your Python program in a file named **Lab06P4.py**. Submit the file to Blackboard for credit.

## Problem 5

Write a Python program to do the following.

1. Create a tuple to store the following values: 7, 5, 2, 8
2. Change the next-last element from 2 to 1. Display the tuple.

The following is the expected output.

Tuple after element change: (7, 5, 1, 8)

Save your Python program in a file named **Lab06P5.py**. Submit the file to Blackboard for credit.

# Grading rubric for Problem 1

Creating list [10 points]

Displaying house prices and commission [10 points]

# Grading rubric for Problem 2

Creating lists [10 points]

Concatenating lists [5 points]

Displaying list elements [5 points]

# Grading rubric for Problem 3

Creating list [5 points]

Copying all list elements [5 points]

Copying first 4 list elements [5 points]

Copying last 4 list elements [5 points]

# Grading rubric for Problem 4

Creating list of lists [10 points]

Displaying scores [10 points]

# Grading rubric for Problem 5

Creating tuple [5 points]

Changing element [10 points]

Dispaying tuple [5 points]