# COMP2120 - Fall 2020

## Lab 5 Activities

Activity 1.

In the previous lab, you have implemented a class for a robot movement simulation. However, using this Java class, you are not able to record the movement history of a given robot object. Perform required modification on the Robot class to be able to store all the movements of a given Robot object in an ArrayList, starting from the initial location to the current location. For instance, if a Robot moves like the ones we have in the tester class of the previous activity, then the list should have the following information:

(5,5) , E
(6,5), E
(6,5), S
(6,6), S
(6,7), S
(6,7), W
(5,7), W
(4,7), W
(4,7), S
(4,8), S

In a tester class, like the one in the previous activity, after some movements, print the path of the robot movements, like above.

Activity 2.

Fibonacci numbers are integer numbers in the following integer sequence, such that every number after the first two is the sum of the two preceding ones.

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0, 1, 1, 2, 3, 5, 8, 13, 21, 34, ...
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Write a Java program to get an integer number from the user, say n, and then prints the first n Fibonacci numbers from that sequence. Also, save this sequence in an ArrayList. Then, get an integer number from user, check to see if it is in the range of array elements and if it is valid, print the corresponding element to that integer number.

Activity 3.

In the previous lab you created a Car class and a Dealership class. Now, in this activity change the design of the Dealership class, in which the list of the cars inside a dealership will be stored in an ArrayList. Then, provide required getter and setter methods to keep the records of all its cars. In your tester class, test your class and also printout the list of all cars of a given dealership object.