

Information and Computer Science Department
Spring Semester 192
ICS 201 - Introduction to Computing II
Final Exam Programming
Saturday August 22, 2020
Duration: 120 minutes

Question # 1[30 points]

Write a recursive method that finds the number of occurrences of a specified character in a string using the following method header:

```
public static int count(String str, char a)
```

For example, `count("Welcome", 'e')` returns `2`. Write a test program that prompts the user to enter a string and a character and displays the number of occurrences for the character in the string.

Question # 2[30 points]

Implement an ordered list capable of holding objects of an arbitrary type, `T`, by defining an `OrderedList` class that implements the ordered list with an `ArrayList`. An `OrderedList` is a type of list where a new item will be added to the list in its correct position. Your class should support the following methods:

- ~ `add(item)`—Adds a new item to the list.
- ~ `remove(item)`—Removes the item from the list. If the item is not in the list, return `null`.

Question # 3[35 points]

Implement a java FX application that displays an array of images on the screen. It has a button next that displays the next image in the array. At the start, the first image is displayed.