**CSCI 6103 Final Exam**

Create LiveLab account:

We will use LiveLab for submitting the exam. Here is the instruction to create a LiveLab account.

* Go to <http://livelab.georgiasouthern.edu/JavaLiveLab2020>
* Under the Student tab, click Create Account

Use Signup Code **coding101** and Course ID **csci6103spring2022** to create your account. Use your last name and underscore (\_) and first name for username. For example, my name is Yong Liang, the username is liang\_yong.

**Important NOTE: Choose a password that is unique to this Website. Don't use this password on other Websites. (THIS IS IMPORTANT. PLEASE FOLLOW THIS INSTRUCTION.)**

**This is an open book exam. You can look at the book and use your favorite IDEs. But you cannot consult with others. You must submit the work within the given time.**

1. (15 pts) Please submit your code to LiveLab (URL: livelab.georgiasouthern.edu/JavaLiveLab2020) under PFinal1

Write a recursive method that computes the sum of the digits in an integer. Use the following method header:

**public static int** sumDigits(**long** n)

For example, **sumDigits(234)** returns 

Write a test program that prompts the user to enter an integer and displays its sum.

Hint:

sumDigits(n) = 0 if n = 0

sumDigits(n) = sumDigits(n / 10) + n % 10, if n > 0

<Sample output>

Enter an integer: 345

The sum of digits in 345 is 12

</Sample output>

2. (15 pts) Please submit your code to LiveLab (URL: livelab.georgiasouthern.edu/JavaLiveLab2020) under PFinal2

Write a program that reads five strings and displays the strings in increasing order of their last character. Strings are separated by spaces. You must use the Comparator interface with the lambda expression to specify a sort criterion. The Comparator interface is introduced in Section 20.6 in the text.

<Sample output>

Enter five strings: Macon Savannah Atlanta Richmond Chatham

The strings in increasing order of their last character are

Atlanta Richmond Savannah Chatham Macon

</Sample output>