

Final Exam Review Points

Location: **V29, Verill Hall (same classroom)**

Duration: **2 hours**

Date and Time: **07/14/2022 (Thursday) at 10 am**

The final exam will consist of 100% skill questions covered Lecture 7, 8, 9, and 11. Skill questions require you to write code. The exam will be a **paper-based** exam; you will not have access to laptops, internet, phones, books, or notes. You should be prepared to write code without the help of Eclipse.

1. Given a lambda, find a suitable type, turn it into a method reference, indicate the type of method reference (one of 4 possibilities) and replace lambda with static inner class. (check the Problem 1 in Practice 4 – 6 and lab 8) [10 pts]
2. Create lambda/stream pipeline to solve problems; know how to use the following stream operations.

Stream API operations that you should know:

of
iterate
limit
skip
concat
filter
map
flatMap
reduce
distinct
sorted (should also know Comparator.comparing, thenComparing, and reversed)
count
max (need to know how the Optional class works)
findFirst
findAny
ofNullable (be able to use ofNullable together with orElse/orElseGet)
collect (Collectors.groupingBy(), Collectors.joining(), and Collectors.toList())

There will be 9 problems related the Stream API
(check the Problem 2 in Practice 4 – 6 and Lab 9) [45 pts]

3. Create the most general possible method (a “generic method”) to solve some problem (like finding max element of a list (Lesson 11), finding second largest element of a list (check Lab 11 and the problem 2 of practice 7). [10 pts]

The SCI Question: [3 pts] You will be given an insight/principle from SCI, and you will be asked to explain what it means and give an example of how it is exemplified or illustrated by a Computer Science concept. This is a short essay.

Total: 68 points

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