

Arrays, Collections, Generics

Important Dates:

- Assigned: September 25, 2024
- Deadline: October 9, 2024 at 11:59 PM EST

Objectives:

- Students begin to understand the differences between classes in the Java Collections API.
- Students see the advantages and disadvantages over static arrays versus `ArrayList` objects.
- Students learn how generics allow them to write methods that work over any type.

What To Do:

For each of the following problems, create a class named `ProblemX`, where `X` is the problem number. E.g., the class for problem 1 should be `Problem1.java`. Write (JUnit) tests for each method that you design in corresponding test files named `ProblemXTest`, where `X` is the problem number. Additionally, write Javadoc comments explaining the purpose of the method, its parameters, and return value. **Do not round your solutions!**

You must write sufficient tests and adequate documentation.

All problems are listed in *Learning Java - A Test-Driven Approach*. This problem set contains ten required problems and one extra credit problem, meaning the maximum possible score on this problem set is 120%/100%. Extra credit problems are not eligible for corrections.

1. Exercise 3.7 [*Enhanced fizzbuzz*]
2. Exercise 3.9 [*Median finder, but different*]
3. Exercise 3.24 [*Can sum?*]
4. Exercise 3.25 [*Linear regression*]
5. Exercise 3.33 [*Climbing mountains for the peaks*]
6. Exercise 3.42 [*String tokenization*]
7. Exercise 3.43 [*Counting tokenized words*]
8. Exercise 3.55 [*Postfix evaluator*]
9. Exercise 3.66 [*Minesweeper*]
10. Exercise 3.84 [*Parallel lists*]
11. **Extra Credit (20 points)** Exercise 3.65 [*Mini-SQL*]