

## Assignment 1 – Selection in an Array

Assigned: Monday January 14, 2013  
Due: Tuesday January 22, 2013 11:59 PM  
Assignment Type: Individual

### Problem Description

This assignment focuses on implementing the methods of a class much like `java.util.Arrays` – a library class with static methods designed to provide useful functionality on arrays. The class that you will be completing is designed to provide a set of selection methods (e.g., minimum, maximum, etc.) on arrays. You must correctly implement all method bodies of the provided `Selector` class. Your implementation must adhere exactly to the API of the `Selector` class, as described in the source code comments. Deviation from any aspect of the API, or the items listed below, will result in a deduction of points. Other specific requirements and notes:

- You must not add any public methods to the `Selector` class. You are free to add any private methods that you think appropriate, but you can't add any public methods.
- You must not add any fields, either public or private, to the `Selector` class.
- You must not import anything other than `java.util.Arrays`, but you are not required to do even that.
- You must not modify the existing constructor or add other constructors. This class is designed to be strictly a provider of static methods and should not be instantiated.
- The `kmin` and `kmax` evaluation must be interpreted in terms of a *dense ranking* (<http://en.wikipedia.org/wiki/Ranking>). For example, suppose the array contained the six elements (five distinct values) `[12, 2, 8, 4, 2, 10]`. Then for `k = 1`, `kmin = 2` and `kmax = 12`; `k = 2`, `kmin = 4`, `kmax = 10`; `k = 3`, `kmin = 8`, `kmax = 8`; `k = 4`, `kmin = 10`, `kmax = 4`; `k = 5`, `kmin = 12`, `kmax = 2`.
- Record your name and TigerMail in the provided `@author` tag.
- Replace the date in the `@version` tag with the current date each time you work on the file.
- Your submission will be graded against a test suite written by the course staff. If your submission does not compile with the test suite, you will receive a score of zero points for the assignment.
- Your submission must be solely your own work. Discussing ideas and general approaches to a problem is fine, but sharing source code, even small sections of it, is considered a violation of the academic honesty policy.
- You are encouraged to ask and answer questions on Piazza regarding the assignment.
- Good coding style is expected. An excellent discussion on style can be found in the CACM article *Coding Guidelines: Finding the Art in the Science* by Green and Ledgard (<http://cacm.acm.org/magazines/2011/12/142527-coding-guidelines-finding-the-art-in-the-science/fulltext>). Run Checkstyle with the configuration file for 2210 on your `Selector.java` file before submitting your solution. Try to only submit code that passes the Checkstyle audit.

### Assignment Submission

To submit your solution, you must only turn in `Selector.java`. You must upload this single file to Canvas no later than the date and time indicated. If you do not turn in `Selector.java`, you will receive a score of zero points for the assignment. If you turn in more files than `Selector.java`, the others will be ignored. If your submission does not compile with the assignment test suite, you will receive a score of zero points for the assignment.