

# Sorting

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CSE 114 INTRODUCTION TO OBJECT-ORIENTED PROGRAMMING



# Announcements

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## Topics:

- Multiple classes in a Java program
- Static objects and dynamic objects
- Sorting and searching

Reading: follow the lecture notes closely and use textbook as a reference

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# Creating our own tools

## Using multiple Java files

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Multiple classes making up a program

See [program\\_structure\\_4.txt](#) (v. 4)

See this one for structure 4.1

[one/Selection.java](#) (next)

See this one for structure 4.2

[multiple/ArrayTools.java](#)

[multiple/Selection.java](#)

# Static objects vs. dynamic objects

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See [StaticVsDynamic.java](#)

# Sorting

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See visualizations of different sorting algorithms: <http://visualgo.net/en/sorting>

## Selection sort

- See [Selection.java](#) (in either the 'one' or 'multiple' folder)
- Multiple classes making up a program

## public vs. private

- Now that we are writing programs consisting of multiple classes we can talk about public vs. private
- See `ssort` and `swap` in [Selection.java](#) for an example

## Insertion sort

- See [Insertion.java](#)
- Comparison with selection sort algorithm

## Quick sort, merge sort

- We will only see a demonstration of these and a brief description of the ideas in this course if time permits
- We will see advanced sorting algorithms in CSE 214

# Searching

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## Linear search

- Too slow for a large number of data elements
- See [Search.java](#)

## Binary search

- See [BinSearch.java](#)
- Much more efficient than linear search!
- How much more?

# Next time

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Objects!