Review of Fundamental Data Structures

Reading

- Read 1.4, pages 25-37
  - What are **arrays** and **linked lists**? What are the differences between then?
  - What are **stacks** and **queues**? What are their key operations? How can they be implemented using a double-linked list?
  - What is a **priority queue**? What are its key operations?
  - What are the two ways of representing **graphs**? What are the advantages and disadvantages of each approach?
  - How can we represent **weighted graphs**?
  - When do we say that a graph is **connected**?
  - What graphs do we call **(free) trees**?
  - What is the difference between a "free tree", a "rooted tree" and an "ordered tree"?
  - What are **binary search trees**?
  - Describe the **first child-next sibling** representation of ordered trees. Illustrate with an example of an ordered tree presented both "normally" and via this alternative representation.
  - Work on exercises 1.4.2, 1.4.3, 1.4.4
  - Carefully and completely do exercise 1.4.5