SIENAcollege
Computer Science

Topic Notes: Some Java API Classes

We have made use of the `structure5` classes for much of our study this semester. While these classes are freely available and can be used in any Java program (as long as the `bailey.jar` file is present), our motivation for doing so was because they were implemented specifically for pedagogical use and the source code is readily available.

More likely, you will want to use the standard Java API classes when possible in your programming. We have used some this semester. Here are a few others you are likely to find useful:

`List` The interface that defines the common operations among several implementations of list structures – these are the structures for which we use indices into the list.

`ArrayList` The resizable array-based list implementation we all know and love.

`Deque` The interface that defines the common operations of "double-ended queues", whose operations can be used to obtain both traditional stack and queues.

`ArrayDeque` The resizable array-based list implementation of the `Deque` interface.

`LinkedList` A doubly-linked list implementation. Implements both `List` and `Deque`.

`Stack` A stack that extends rather than being built upon the `Vector` class. It is better to use the `ArrayDeque` implementation when you need a stack.

`PriorityQueue` A priority queue implementation based on a heap.

`Map` The interface that defines the common operations of the mapping of key-value pairs.

`TreeMap` A map implementation based on red-black trees (similar to the AVL trees we studied).

`HashMap` A map implementation based on hash tables. Uses external chaining.