159.272 Programming Paradigms

Tutorial 5

Genetics and Unit testing with JUnit

This tutorial is structured to help you in the lead up to Assignment 1. In addition to working with a generic class, you will need to carefully test a pre-implemented class.

Objectives:

- Implement a class that uses generics
- Create appropriate unit tests to probe functionality

Deliverables

- Export the project from Eclipse and upload to Stream.

Instructions

There are two tasks for you to complete in this tutorial:

1. Implement the missing methods in the SimpleList<E> class. Once complete, you will have created an array list type data structure that can add, remove and get items. As you complete each method, run the corresponding test cases in SimpleListTests. Once they are all working, you should be done.
    a. Things to consider: dynamic resizing and behaviour at the edge cases (before resizing, when the list is empty, etc).
2. Test ExtendedArrayList from as many angles as you can think about. Potential things to consider (this is not an exhaustive list):
    a. Can this list work with generics correctly?
    b. Can this list work with the ArrayList inheritance structure okay?
    c. Are the new methods fool proof? What happens at the edge cases (empty lists, big lists, lists with elements removed)?