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Project 5 – testing report

Double Linked List:

My test cases for DoubleLinkedList are thorough. The ones I wrote myself are .equals() and append(DNA dna). For the .equals method, my cases test for empty lists, one empty list, uneven lists, different elements, equal lists, and different objects. All these tests returned valid results. For the append method, my tests test for two empty lists, one empty list, uneven list, and even lists. All these tests gave valid results. Both my methods passed my tests in DoubleLinkedLists.

DNA:

My test cases for DNA are also thorough. The ones I wrote were testToString(), testSplice(), testString2DNA(), testOverlaps().

For testToString(), I tested for an empty list, a list with one node, a list with two nodes, and a list with three nodes. All my tests passed.

For my testSplice(), I tested for throwing exceptions, splicing empty strings, testing splicing with 4 overlapping bases (same length), with 4 overlapping bases different length, with 0 overlapping bases (different length). These tests seem to be thorough, but I believe I am missing a fundamental error in my method that is causing me to have a warning with a NullPointerException message.

For my testString2DNA() method, it tests for using the wrong characters, with an empty string, with a string with one character in it, and a string with 5 characters in it. It seems to be working well, as it passes every test.

For my testOverlaps() method, it tests for overlap with empty lists and an arbitrary number, overlap with an empty list with an arbitrary number, with length as 1 and overlapping DNA structures, with even length (6) and non-overlapping linked lists, with even length and overlapping linked lists. Unfortunately, this test failed.

For my main method, I did not write any JUnit code because it is not efficient. I tested it normall in the interactions pane:

> java DNA CGCTCACCTAT ATAATCGCTCT

java.lang.NullPointerException

at DNA.splice(DNA.java:69)

at DNA.main(DNA.java:185)

> run DNA ACTACTACT ACTGTGTG

java.lang.NullPointerException

at DNA.splice(DNA.java:69)

at DNA.main(DNA.java:185)

at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)

at sun.reflect.NativeMethodAccessorImpl.invoke(Unknown Source)

at sun.reflect.DelegatingMethodAccessorImpl.invoke(Unknown Source)

at java.lang.reflect.Method.invoke(Unknown Source)

at edu.rice.cs.drjava.model.compiler.JavacCompiler.runCommand(JavacCompiler.java:271)

As one can see, my main method did not work for these two instances. However, while the most important method, splice, did not work properly 100% of the time, one can assume it works well at least some of the time, and therefore for some cases my main method would work.