

Program #4: Linked List

Using a new `List` class template and main program (provided on moodle), you are to “rewrite” the `List` class (from the `EasyList` assignment) so that it now uses a **linked list** as the backend data structure as opposed to an array. You may not add any more public functions to the template, but you can implement as many private helper functions as you wish.

1. For this assignment, you will be provided three files:
 - `ListTest.java` contains the `main` function. You may **NOT** modify this file!
 - `List.java` currently contains a template, but should eventually contain your implementation of the list class.
 - `ListTest.out` contains the output from my implementation of the list class. You would be wise to ensure your output is **EXACTLY** the same (That includes spacing and formatting).
2. Please note the helpful comments scattered throughout the code. In many cases, they provide hints and identify what *not to do*.
3. Please keep the naming of the file you are to modify (`List.java`). This is the **only** file you will turn in.
4. Label the file by typing your name in the commented section at the top of the `List.java` file.
5. Compiling `ListTest.java` should automatically use your `List.java` file (assuming they are in the same directory). After successful compilation, running the produced executable file SHOULD produce output identical to `ListTest.out`.
6. Feel free to redirect the output to a file of your choosing, and then compare the two files (i.e. `ListTest.out`, and your output file) using the command prompt with commands such as **diff**, **comm**, **fc**, or any other you deem appropriate)
7. For example, once completed, the three commands below should **NOT** produce any output.

Linux:

```
javac ListTest.java
java ListTest > myOutput
diff ListTest.out myOutput
```

Windows:

```
javac ListTest.java
java ListTest > myOutput
fc ListTest.out myOutput
```