CMPS 12B
Introduction to Data Structures
Winter 2009

Programming Assignment 5

Due Wednesday March 18, 10:00 pm

This final programming project is to be considered optional. If you choose to build it, your score on the programming part of the course will be based on 5 projects, otherwise will be based on the first 4 projects. Your goal will be to translate the Binary Search Tree (BST)-based Dictionary in C, which is posted on the webpage, into Java. The files

```
DictionaryInterface.java
KeyCollisionException.java
KeyNotFoundException.java
DictionaryClient.java
```

are provided in the examples section of the webpage, and should be submitted unchanged with this project. The file `model-out` contains the correct output of the program `DictionaryClient.java`. You are to write the implementation file `Dictionary.java` and submit it with the above files, along with a `makefile` that creates an executable Jar file called `DictionaryClient`. (Note: although you should test your ADT operations independently as usual, you will not submit a file called `DictionaryTest.java` with this project.)

The file `Dictionary.java` will implement all operations in `DictionaryInterface.java`, using a BST as the underlying data structure. Begin by studying the file `Dictionary.c`, also on the webpage. Notice that the C version contains a number of private helper functions used by the ADT operations. It is strongly suggested that you write these methods into your Java implementation.

Submit the four files above along with

```
Dictionary.java
makefile
README
```

to the assignment pa5. (Note the submit directory for pa5 will not be opened until pa4 is closed.) Even though this project is possibly the easiest program of the quarter, don't wait until the last minute to start. Ask questions if anything is unclear.