

CMPS 12B

Introduction to Data Structures

Lab Assignment 7

Your goal in this project will be to translate the Binary Search Tree (BST) based Dictionary in C, posted on the webpage, into Java. The files

```
DictionaryInterface.java
DuplicateKeyException.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 that although you should test your ADT operations independently as usual, you will not submit a file called `DictionaryTest.java` with this project.

`Dictionary.java` will implement all operations in `DictionaryInterface.java` using a BST as the underlying data structure. Begin by studying the file `Dictionary.c` found on the webpage at `Examples/Lecture/C_Programs/DictionaryADT/`. 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 same methods into your Java implementation, as private functions of course.

Submit a pair programming log with git id as with other assignments. The `lab7` directory should contain the four files above along with

```
Dictionary.java
Makefile
README
```

Please do not wait until the last minute to start. Ask questions if anything is unclear.