Assignment 2 - Dictionary

Date assigned: Monday, February 22, 2010
Date due: Wednesday, March 3, 2010
Points: 35

Many games and puzzles require the use of some kind of dictionary. You are to use the object-oriented programming skills we have been talking about for the last few weeks to implement such a dictionary. For the purposes of this assignment, we are all going to use the same interface to our dictionary; therefore, you need to implement each constructor and method for each of the following class definitions:

Word Class

```
#ifndef WORD_H
#define WORD_H

const int MAX_WORD_LENGTH = 128;

class Word
{
  private:
    char word[MAX_WORD_LENGTH];

  public:
    Word ();                       // initializes the private word member to a null string
    Word (const char []);          // initializes the private word member to the word passed in
    void setWord (const char []); // initializes the private word member to the word passed in
    void printWord ();             // prints out the private word member with no endl
    void getWord (char []);        // returns the word through the method argument
};
#endif
```

Dictionary Class

```
#ifndef DICTIONARY_H
#define DICTIONARY_H

#include "Word.h"
#include <iostream>

using namespace std;

const int MAX_WORDS_IN_DICTIONARY = 1024;

class Dictionary
{
  private:
    Word cWords[MAX_WORDS_IN_DICTIONARY];
    int numWordsInDictionary;
  public:
    Dictionary (const char []);          // accepts a file name and loads the dictionary
    void loadDictionary (const char []); // accepts a file name and loads the dictionary
    void printDictionary ();             // prints the entire dictionary one word per line
    void getRandomWord (char []);        // returns a random word through the method argument
};

#endif
```

The above documentation is not necessary in your program. I just documented next to the functions and constructors so that you know what each method and constructor is supposed to do.

I would like you to use the following driver for the final version of your program.

```
#include <iostream>
#include "Word.h"
#include "Dictionary.h"

using namespace std;

int main ()
{
  char word[MAX_WORD_LENGTH];

  Dictionary cDictionary ("dictionary.txt");

  cout << "Entire Dictionary" << endl << "------ ----------" << endl;
  cDictionary.printDictionary ();

  cout << endl << "Random Dictionary Word" << endl
               << "------ ---------- ----" << endl;
  cDictionary.getRandomWord (word);
  cout << word << endl << endl;

  return 0;
}
```

Goals for Assignment 2:

1. Use the new C++ coding standards Version 6 with your object-oriented code.
2. Use the .h/.cpp separate file design for defining and implementing classes.
3. Get used to the new compiler errors that you will encounter when you implement the constructors and methods of classes.
4. Implement at most one constructor or method at a time and make sure to extensively test the constructor or method before going on. I promise you that on this assignment if you write to much code you will have extreme difficulties getting the code to compile and run.

Notes:

- You must use the above C++ code and implement each method exactly as described.
- If you have any questions, please see me early.
- Do not change any of the method prototypes.
- You are to follow version 6 of the coding standards.
- I will run your program on the above driver and one or more other drivers.
- I will supply a dictionary later. For now make up your own with a few words in it.

What to Submit

- Save your project as 02PUNet. So as an example, mine would be 02ryandj.
- Your code is to be written using Visual Studio 2008 and placed in the CS250 Drop Box by 9:15am on the day in which the assignment is due. A stapled hard copy must be placed on the instructor's desk before 9:15am on the day the assignment is due.

Part I (Due: Friday, February 26 by 3 pm)

You are to implement the Word class as described above. The interface is to go in Word.h and the implementation is to go in Word.cpp. You are to write a driver program in main.cpp that tests each constructor and method of the Word class. Your project is to be dropped in the CS250 Drop Box no later than 3pm and I must have your hard copy no later than 3pm.