

# COP-4338 Systems Programming

## Programming Assignment 6: I/O and Binary Search

Due Date: Aug 2 at 11:59 PM (No LATE Submissions allowed)

In this assignment, you are asked to write a C function with the following signature that spell-checks its first input parameter (which is a string/char array) and returns 0 if it is not spelled correctly:

```
int spellCheck(char* word, char* dictionaryFileName){...}
```

To perform spell-checking, you simply need to do **binary search** on the **sorted** list of English words given in their correct forms in the file entitled “dictionary.txt” available on Canvas along with the specification of this assignment. The name and path of this file is passed to your function as the second input parameter.

Binary search can either be implemented using a binary search tree (taught in the class) or using an iterative algorithm like the following:

```
int binsearch(char* dictionaryWords[],int listSize,char* keyword){
    int mid, low = 0, high = listSize - 1;
    while (high >= low) {
        mid = (high + low) / 2;
        if (strcmp(dictionaryWords[mid],keyword) < 0)
            low = mid + 1;
        else if (strcmp(dictionaryWords[mid],keyword)>0)
            high = mid - 1;
        else
            return mid;
    }
    return -1; //not found
}
```

## Submissions

You need to submit a *.zip* file compressing the C source file(s) related to the assignment (*.c* files).