

Systems Software
Assignment 6: Using C++ STL

Assignment Objectives

In this assignment, students should demonstrate the following abilities:

1. Use the template class **unordered_map** from the STL to create a hash table
2. Read a text file of English words and store them in a hash table as a dictionary
3. Use the hash table to check the spelling of an input text file

Assignment

In this assignment, you will create a hash table and use it to store thousands of English words that you will use as a dictionary to check the spelling of the words in an input text file.

1. Use the template class **unordered_map** for the type **<string, string>** to create a hashtable where the key and its mapped value are both the same word.
2. Write a C++ program that reads in a text file (given as a command-line argument), parses each word, and determines whether each word is in the hash table and if not output the line number and the misspelled word. Use the text file **words.txt** as the dictionary to fill in the **unordered_map** hash table. Test your spell-checker program on the provided file **sample_text.txt**. Note that some words are capitalized in **sample_text.txt**. A sample run of the program is provided below. You can also use other sample text files to verify your spell checker program (one additional file is provided with the assignment, **speech.txt**).
3. Submit your main program in a file named **spell_checker.cpp**.

----- **Sample run** -----

```
>./spell_checker sample_text.txt
File words.txt opened successfully.
File sample.txt opened successfully.
line 1: misspelled word - creat
line 2: misspelled word - english
line 3: misspelled word - as
line 4: misspelled word - speling
Spell check completed.
```

----- **sample_text.txt** -----

```
In this lob, you will creat a hash table.
Store English words in the hash table.
Use the hash table as a dictionary to check
the speling of the words in an input text file.
```