

User Document

Course: CSCI 301 – Computer Science 2

Project: Project 3 – ADT Bag with Doubly Linked List and Spell Checker

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Purpose

This project demonstrates:

- **Part I:** Implementation of an Abstract Data Type (ADT) Bag using a **doubly linked list**.
- **Part II:** Application of the bag in a **spell checker** that compares input words against a dictionary.

Requirements

- C++ compiler (g++ recommended).
- Provided source files:
 - DoublyNode.h, DoublyLinkedBag.h, DoublyLinkedBag.cpp, project3.cpp (Part I).
 - SpellChecker.cpp, dictionary.txt, and test files (myreport.txt, empty.txt, badtext.txt, correct.txt) (Part II).

How to Compile and Run

Part I – Bag Tester

1. Compile the bag tester:
2. `g++ -std=c++11 project3.cpp -o bagtest`
3. `./bagtest`
4. Output shows:
 - Items added to the bag.
 - Search results using `contains()`.
 - Frequency checks with `getFrequencyOf()`.
 - Items removed with `remove()`.
 - Bag cleared with `clear()`.
5. Sample terminal output is captured in `tests.txt`.

Part II – Spell Checker

1. Compile the spell checker:
2. `g++ -std=c++11 SpellChecker.cpp -o spellchecker`
3. `./spellchecker`
4. When prompted, enter the name of the text file to check (e.g., `myreport.txt`).
5. Program will print all words not found in the dictionary.
6. All test cases (valid, boundary, invalid, all correct) are shown in `tests.txt`.

Example Run (Part II)

./spellchecker

Enter the name of the file that contains words to check: myreport.txt

The following words in the file "myreport.txt" are not spelled correctly:

Stude

Reseach

Resul

Outpt

Thanks for using the spell checker system.

Troubleshooting

- **Error: Cannot open dictionary file** → Ensure dictionary.txt is in the folder.
- **Error: Cannot open input file** → Check spelling of filename.
- **No errors printed** → File is either empty or all words are correct.