

User Document

Course: CSCI 301 – Computer Science 2

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

Student: Dinesh Seveti

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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, DoublyLinkedListBag.h, DoublyLinkedListBag.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.