ASSIGNMENT 1

PROGRAM

**copy.cpp**

#include<iostream>

#include<fstream>

#include<string>

using namespace std;

void copyFile(const string &sourceFile, const string &destinationFile) {

ifstream source(sourceFile, ios::binary); // Open source file in binary mode

if (!source.is\_open()) {

cerr << "Error occurred while opening source file" << endl;

return;

}

ofstream destination(destinationFile, ios::binary); // Open destination file in binary mode

if (!destination.is\_open()) {

cerr << "Error occurred while opening destination file" << endl;

return;

}

destination << source.rdbuf();

cout << "File copied successfully!" << endl;

source.close();

destination.close();

}

int main(int argc, char \*argv[]) {

if (argc != 3) {

cerr << "Invalid syntax! Correct usage: <program> cp <sourceFile> <destinationFile>" << endl;

return -1;

}

string command = argv[1];

if (command == "cp") {

copyFile(argv[2], argv[3]);

} else {

cerr << "Invalid Syntax" << endl;

return -1;

}

return 0;

}

**osl1.cpp**

// For LINUX Systems ONLY!!

#include <iostream>

#include <cstdlib>

#include <unistd.h>

#include <sys/wait.h>

#include <string>

#include <regex>

#include <fstream>

using namespace std;

void copyFile(const string &sourceFile, const string &destinationFile) {

int p = fork();

if (p < 0) {

cerr << "Error occurred while creating process" << endl;

exit(EXIT\_FAILURE);

} else if (p == 0) {

execlp("./copy", "cp", sourceFile.c\_str(), destinationFile.c\_str(), NULL);

perror("Exec Command Failed");

exit(EXIT\_FAILURE);

} else {

wait(NULL);

cout << "File Copied from " << sourceFile << " to " << destinationFile << " successfully!" << endl;

}

}

void grep(const string &option, const string &pattern, const string &filename) {

ifstream file(filename, ios::in);

if (!file.is\_open()) {

cerr << "Error opening file!" << endl;

return;

}

regex regexPattern;

if (option == "-w") {

regexPattern = regex("\\b" + pattern + "\\b");

} else {

cerr << "Error: Unsupported option" << endl;

file.close();

return;

}

string line;

while (getline(file, line)) {

if (regex\_search(line, regexPattern)) {

cout << line << endl;

}

}

file.close();

}

int main(int argc, char \*argv[]) {

if (argc < 2) {

cerr << "Error: No command line arguments available!" << endl;

return -1;

}

string command = argv[1];

if (command == "cp") {

if (argc != 4) {

cerr << "Invalid command syntax" << endl;

return -1;

}

copyFile(argv[2], argv[3]);

} else if (command == "grep") {

if (argc != 5) {

cerr << "Invalid command syntax" << endl;

return -1;

}

grep(argv[2], argv[3], argv[4]);

} else {

cerr << "Error: Invalid Command. Use cp or grep command only." << endl;

}

return 0;

}

OUTPUT:

OUTPUT:

(base) pccoe@pc-3:~/Desktop$ g++ copy.cpp -o copy

(base) pccoe@pc-3:~/Desktop$ ./a.out cp source.txt destination.txt

In parent process, waiting for child process to finish...

In child process, executing 'copy' program

File copied successfully!

File copied from source.txt to destination.txt successfully!

(base) pccoe@pc-3:~/Desktop$ ./a.out grep -w Yash source.txt

I am Yash J



