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```
#include <iostream>
#include <fstream>
#include <unistd.h>
#include <sys/types.h>
#include <sys/wait.h>
#include <cstring>

using namespace std;

void simulate_cp(const string &source, const string &destination) {
    ifstream src(source, ios::binary);
    if (!src) {
        cerr << "Source file open failed" << endl;
        exit(1);
    }
    ofstream dest(destination, ios::binary);
    if (!dest) {
        cerr << "Destination file open failed" << endl;
        exit(1);
    }
    dest << src.rdbuf();
    cout << "File copied successfully by process " << getpid() << endl;
}

void simulate_grep(const string &pattern, const string &file) {
    ifstream fp(file);
    if (!fp) {
        cerr << "File open failed" << endl;
        exit(1);
    }
    string line;
    while (getline(fp, line)) {
        if (line.find(pattern) != string::npos) {
            cout << line << endl;
        }
    }
    cout << "Grep operation completed by process " << getpid() << endl;
}

int main() {
    int choice;
    string source, destination, pattern, file;

    while (true) {
```

```

cout << "\nMenu:\n";
cout << "1. Copy file (cp)\n";
cout << "2. Search in file (grep)\n";
cout << "3. Exit\n";
cout << "Enter your choice: ";
cin >> choice;
cin.ignore();

switch (choice) {
    case 1:
        cout << "Enter source file name: ";
        cin >> source;
        cout << "Enter destination file name: ";
        cin >> destination;

        if (fork() == 0) {
            simulate_cp(source, destination);
            exit(0);
        } else {
            wait(NULL);
        }
        break;

    case 2:
        cout << "Enter pattern to search: ";
        cin >> pattern;
        cout << "Enter file name: ";
        cin >> file;

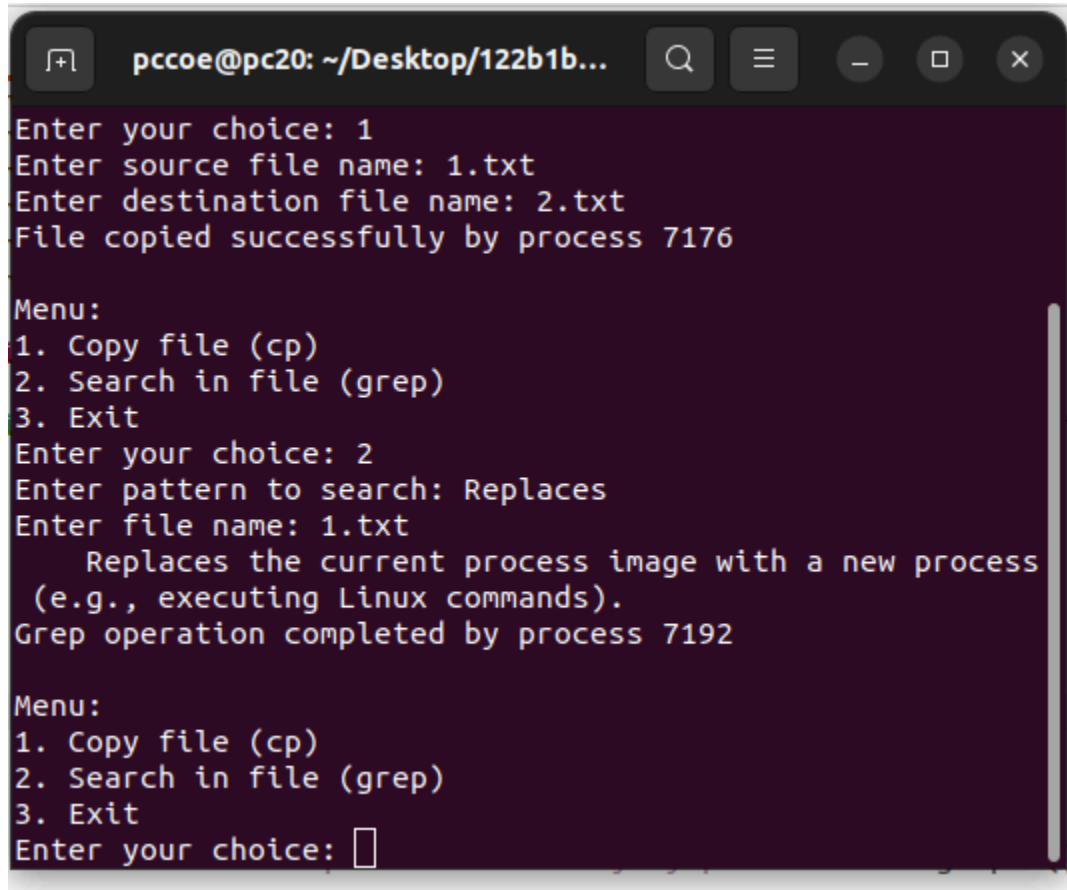
        if (fork() == 0) {
            simulate_grep(pattern, file);
            exit(0);
        } else {
            wait(NULL);
        }
        break;

    case 3:
        cout << "Exiting program..." << endl;
        exit(0);

    default:
        cout << "Invalid choice. Please try again." << endl;
}
}
return 0;
}

```

OUTPUT:



A terminal window with a dark purple background and white text. The window title bar shows the user 'pccoe' on machine 'pc20' at the directory '~/Desktop/122b1b...'. The terminal output shows a sequence of commands and their results: a choice of 1 to copy a file, the source file '1.txt' and destination '2.txt' are specified, and the copy is successful. Then, a menu is shown with options 1 (Copy file), 2 (Search in file), and 3 (Exit). Choice 2 is selected, followed by the pattern 'Replaces' and file '1.txt'. A message explains that this replaces the current process image with a new process (e.g., executing Linux commands). The grep operation is completed, and the menu is shown again. The terminal ends with the prompt 'Enter your choice:' and an empty input box.

```
pccoe@pc20: ~/Desktop/122b1b...
Enter your choice: 1
Enter source file name: 1.txt
Enter destination file name: 2.txt
File copied successfully by process 7176

Menu:
1. Copy file (cp)
2. Search in file (grep)
3. Exit
Enter your choice: 2
Enter pattern to search: Replaces
Enter file name: 1.txt
    Replaces the current process image with a new process
    (e.g., executing Linux commands).
Grep operation completed by process 7192

Menu:
1. Copy file (cp)
2. Search in file (grep)
3. Exit
Enter your choice: 
```