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//
//  main.cpp
//  PA4_student_list
//
//  Created by Celine Wang on 9/17/23.
//

#include <iostream>
#include <fstream>
#include <string>
#include <sstream>
#include <limits>

using namespace std;

int main() {
    //display title
    cout << "Student List Program\n";

//    //open input file
//    string filename;
//    ifstream infile;
    //prompt user to choose
    while(true){
        cout << "== * == * == * == * == * == * == * == * == * == * ==
* == * ==" << '\n';
        cout << "     How would you like to read in the students's
name?       " << '\n';
        cout << "         (1) Entering names from keyboard
" << '\n';
        cout << "         (2) Reading names from external file
" << '\n';
        cout << "         (3) End program
" << '\n';
        cout << "== * == * == * == * == * == * == * == * == * == * ==
* == * ==" << '\n';
        cout << "\n       Enter your choice: ";

        int choice = 0;
        cin >> choice;
        cout << endl << endl;
        //1. enter new names
        if (choice == 1){

            while (true){
                int adds;
                cout << "Enter the number of students between 5 and 30
inclusive: ";
                cin >> adds;
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                //input validation and append added student names
                if (adds >=5 && adds <=30){
                    ofstream output_file;
                    output_file.open("Students Names.txt", ios::app);
                    string current;
                    cin.ignore();
                    output_file << endl;
                    for (int count = 1; count <= adds; count++){
                        cout << "\nEnter the full name of student" <<
count << ":";
                        getline(cin, current, '\n');
                        output_file << current <<'\n';
                    }
                    output_file.close();

                    //list added names
                    cout << "\nHere is the list of names you have
entered:\n";
                    ifstream input_file;
                    string line;
                    stringstream ss;
                    input_file.open("Students Names.txt");

                    //get total line of file
                    int line_count = 1;
                    while (getline(input_file, line)){
                        line_count++;
                    }                                   //line reaches to
empty line since file ends
                    input_file.close();


                    ifstream in_file;
                    string name;
                    string top_adds = "ZZ";
                    string end_adds = "AA";
                    stringstream ssm;
                    in_file.open("Students Names.txt");
                    //get last added lines of file
                    int i = 1;
                    while(getline(in_file, name)){
                        if (i >= (line_count-adds)){
                            ssm.str(name);
                            cout << (i - (line_count-adds) + 1 ) <<
"." << name << '\n';
                            ssm.clear();
                            //update top and end from last enter
                            if (name < top_adds)
                                top_adds = name;
                            if (name > end_adds)
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                                end_adds = name;
                            }
                            i++;
                        }
                        in_file.close();

                        //print names at the top and end of last enter
                        cout << "The name at the top: " << top_adds <<
endl;
                        cout << "The name at the end: " << end_adds <<
endl << endl;

                        break;
                    }

                    //Input number validation
                    else if(adds < 5){
                        cout << "Minimum added students - 5. Try again.
\n";
                    }
                    else if(adds > 30){
                        cout << "Maximum added students - 30. Try again.
\n";
                    }
                }
            }
            // 2. read from external file
            else if (choice == 2){
                //enter file name
                string file_name;
                ifstream infile(file_name);
                cout << "Enter the name of the file: ";
                cin.ignore(numeric_limits<streamsize>::max(), '\n');
                getline(cin, file_name);


                infile.open(file_name); //"Students Names.txt"
                string top = "ZZ";
                string end = "AA";
                //list all names from the entire file
                if (infile){
                    string line;
                    stringstream ss;
                    string name;
                    int line_count = 1;
                    while (getline(infile, line)){
                        ss.str(line);
                        ss.clear();
                        cout << line_count++ << ". " << line << '\n';
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                    //update top and end
                    if (line < top)
                        top = line;
                    if (line > end)
                        end = line;
                }
            }
            //print names at the top and end
            cout << "\n\nThe name at the top: " << top << endl;
            cout << "The name at the end: " << end << endl << endl;

            infile.close();
        }
        //3. end the program
        else if (choice == 3){
            cout << "\nProgramer: Celine Wang "
                 << "written for the class CISC 192 - C++ Programming.
\n"
                 << "COOD BYE! Press [Enter] key to end the program...
\n\n";
            break;
        }
        continue;
    }
    return 0;
}
```