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#include <iostream>
#include <stack>
#include <string>
using namespace std;

stack<string> undoStack;
stack<string> redoStack;

// Perform a new action
void performAction(const string& action) {
    undoStack.push(action);

    // Clear redo stack because new action invalidates redo history
    while (!redoStack.empty()) {
        redoStack.pop();
    }

    cout << "Performed: " << action << endl;
}

// Undo last action
void undo() {
    if (undoStack.empty()) {
        cout << "Nothing to undo.\n";
        return;
    }

    string lastAction = undoStack.top();
    undoStack.pop();
    redoStack.push(lastAction);
    cout << "Undo: " << lastAction << endl;
}

// Redo next action
void redo() {
    if (redoStack.empty()) {
        cout << "Nothing to redo.\n";
        return;
    }

    string redoAction = redoStack.top();
    redoStack.pop();
    undoStack.push(redoAction);
    cout << "Redo: " << redoAction << endl;
}

// Show history
void showHistory() {
    stack<string> temp = undoStack;
    stack<string> reversed;

    while (!temp.empty()) {
        reversed.push(temp.top());
        temp.pop();
    }
}

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    cout << "History: ";
    while (!reversed.empty()) {
        cout << reversed.top() << " -> ";
        reversed.pop();
    }
    cout << "[CURRENT]\n";
}

int main() {
    int choice;
    string action;

    cout << "---- Undo/Redo Stack Example ----\n";
    cout << "1. Perform Action\n2. Undo\n3. Redo\n4. Show History\n5. Exit\n";

    do {
        cout << "\nEnter choice: ";
        cin >> choice;
        cin.ignore(); // flush newline after number input

        switch (choice) {
            case 1:
                cout << "Enter action: ";
                getline(cin, action);
                performAction(action);
                break;
            case 2:
                undo();
                break;
            case 3:
                redo();
                break;
            case 4:
                showHistory();
                break;
            case 5:
                cout << "Exiting.\n";
                break;
            default:
                cout << "Invalid choice.\n";
        }

    } while (choice != 5);

    return 0;
}

```