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#include <iostream>
#include <string>
#include <vector>
#include <algorithm>
#include <fstream>
#include <cassert>

using namespace std;

// hold words to ignore
vector<string> CommonWords;

// hold statements to say based on user input
vector<string> Statements;

// statements to use if there isn't any subject
vector<string> BlankStatements;

vector<string> getWordsFromLine(string line)
{
    vector<string> parts;

    int prevPos = 0;
    int spacePos = line.find(" ", 0);

    string word;

    while (spacePos != std::string::npos)
    {
        word = line.substr(prevPos, (spacePos-prevPos));
        // remove(word.begin(), word.end(), " ");

        if (!word.empty()) parts.push_back(word);

        prevPos = spacePos + 1;
        spacePos = line.find(" ", prevPos);
    }

    word = line.substr(prevPos, (spacePos-prevPos));
    // remove(word.begin(), word.end(), " ");

    if (!word.empty()) parts.push_back(word);

    return parts;
}

// initial (annoying) chatbot- just parrot everything the user says
void mock(string input)
{
    cout << "'" + input + "'" << "\n";
}

void talkAbout(string subject)
{
    int statementIndex = rand() % Statements.size();

    string statementBase = Statements[statementIndex];

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        int subjectLoc = statementBase.find("@@", 0);

        string newString = statementBase.replace(subjectLoc, 2, subject);
        cout << newString << "\n";
    }

    void sayRandomStatement()
    {
        int statementIndex = rand() % BlankStatements.size();
        cout << BlankStatements[statementIndex] << "\n";
    }

    void talkToUser(string input)
    {
        vector<string> parts = getWordsFromLine(input);

        vector<string>::iterator it;

        // find a subject if one exists
        for (int i=0; i<parts.size(); i++)
        {
            it = find(CommonWords.begin(), CommonWords.end(), parts[i]);

            if (it == CommonWords.end())
            {
                talkAbout(parts[i]);
                return;
            }
        }

        // if we didn't find a subject, say *something*
        sayRandomStatement();
    }

    bool processInput(string input)
    {
        if (input == "quit" || input == "q") return false;

        talkToUser(input);

        return true;
    }

    void InitCommonWords()
    {
        ifstream wordFile("words.txt");
        assert(wordFile);

        string word;
        while (getline(wordFile, word))
        {
            CommonWords.push_back(word);
        }

        wordFile.close();

        sort(CommonWords.begin(), CommonWords.end());
    }

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}

void InitStatements()
{
    ifstream statementFile("statements.txt");
    assert(statementFile);

    string statement;
    while (getline(statementFile, statement))
    {
        Statements.push_back(statement);
    }

    statementFile.close();

    ifstream blankStatementFile("randomStatements.txt");
    assert(blankStatementFile);

    while (getline(blankStatementFile, statement))
    {
        BlankStatements.push_back(statement);
    }

    blankStatementFile.close();
}

int main()
{
    InitCommonWords();
    InitStatements();

    cout << "Hello, how are you today?\n";
    string input;

    bool IsActive = true;

    while (IsActive)
    {
        getline(cin, input);
        IsActive = processInput(input);
    }

    return 0;
}

```