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| **Ch02-02.cpp：** *Send More Money* |
| **Line#** | **Code** |
| 123456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475 | // Ch02-02.cpp : Send More Money Puzzle game#include <iostream>using namespace std;#define S Cs[0]#define E Cs[1]#define N Cs[2]#define D Cs[3]#define M Cs[4]#define O Cs[5]#define R Cs[6]#define Y Cs[7]#define NOI(\_arr) (sizeof(\_arr)/sizeof(\_arr[0]))int Cs[8];int NoOfAnswers = 0;int NoOfPatterns = 0;int Level = 0;void ShowAnswer() { cout << " "<<S<<E<<N<<D << endl; cout << "+"<<M<<O<<R<<E << endl; cout << M <<O<<N<<E<<Y << endl << endl;}bool IsAnswer() { if (S == 0) return false; if (M == 0) return false; if (((D + E) % 10) != Y) return false; int carry = (D + E) / 10; if (((carry + N + R) % 10) != E) return false; carry = (carry + N + R) / 10; if (((carry + E + O) % 10) != N) return false; carry = (carry + E + O) / 10; if (((carry + S + M) % 10) != O) return false; carry = (carry + S + M) / 10; return (carry == M);}bool NotInUsed(int d) { for (int i = 0; i < Level; i++) if (Cs[i] == d) return false; return true;}void Solve() { if (Level < NOI(Cs)) {//Generate for (int d = 0; d < 10; d++) { if (NotInUsed(d)) { Cs[Level] = d; Level++; Solve(); //Recursion Level--; //Back-Tracking } } } else {//Test NoOfPatterns++; if (IsAnswer()) { NoOfAnswers++; ShowAnswer(); } }}int main(){ cout << " SEND" << endl; cout << "+MORE" << endl; cout << "MONEY" << endl<<endl; Solve(); cout << "No of Answers found is " << NoOfAnswers << endl; cout << "No of Patterns examined is " << NoOfPatterns << endl;} |