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// ID: Joseph Wyatt, CIS 163, 10-04-02
// PURPOSE: Demonstrate files, loops, summing
// DESIGN:   open file
//           read 2 integers from file
//           while not at end of file
//             add the integers giving the sum
//             output sum
//             add the sum to the running total
//             read 2 integers from file
//           end while
//           output the total
//           close file
//-----
#include <iostream>
#include <iomanip>
#include <fstream>
#include <string>
using namespace std;

int main()
{
    const string LINES = "+=====+\n";
    ifstream dataFile;           // input data - integers
    int num1, num2, sum;         // for sum equation
    int total = 0;              // must init - accumulator

    // open file & read first 2 integers
    dataFile.open("data.dat");
    dataFile >> num1 >> num2;

    // header (also used as footer)
    cout << LINES << endl;

    // as long as there is data, add the nums, add to total
    // output the info and read 2 more nums
    while (dataFile != 0)
    {
        sum = num1 + num2;
        total = total + sum;
        cout << left << setw(12) << " The sum of "
             << right << setw(4) << num1 << " & "
             << setw(4) << num2 << " = " << setw(4)
             << sum << endl << endl;
        // read next data
        dataFile >> num1 >> num2;
    }

    // output grand total, close file and end program
    cout << " The grand total is " << total << endl;
    cout << endl << LINES << endl;
    dataFile.close();
    return 0;
}

```