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/*************************************************************
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Programming Project 4: stats
Date: March 24, 2025
hours spent on project: 2.5
*************************************************************/
#include <iostream>
#include <vector>
#include <cmath>
#include <iomanip>
using namespace std;

double Mean(const vector<int>& scores) {
    double sum = 0;
    for (int score : scores) {
        sum += score;
    }
    return sum / scores.size();
}

double Deviation(const vector<int>& scores) {
    double mean = Mean(scores);
    double sum = 0;
    for (int score : scores) {
        sum += pow(score - mean, 2);
    }
    return sqrt(sum / scores.size());
}

void Histogram(const vector<int>& scores, vector<int>& bins) {
    for (int i = 0; i < 10; ++i) {
        bins[i] = 0;
    }

    for (int score : scores) {
        if (score >= 90) bins[9]++;
        else if (score >= 80) bins[8]++;
        else if (score >= 70) bins[7]++;
        else if (score >= 60) bins[6]++;
        else if (score >= 50) bins[5]++;
        else if (score >= 40) bins[4]++;
        else if (score >= 30) bins[3]++;
        else if (score >= 20) bins[2]++;
        else if (score >= 10) bins[1]++;
        else bins[0]++;
    }
}

void PrintHistogram(const vector<int>& bins) {
    for (int i = 9; i >= 0; --i) {
        cout << i << "| ";
        for (int j = 0; j < bins[i]; ++j) {
            cout << "*";
        }
        cout << endl;
    }
}

int main() {
```

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    vector<int> scores;
    vector<int> bins(10, 0);
    int score;
    int count = 0;

    while (true) {
        cout << "Enter a score (-1 to end): ";
        cin >> score;
        if (score == -1) {
            break;
        }
        if (score >= 0) {
            scores.push_back(score);
            count++;
        }
    }

    if (count > 0) {

        Histogram(scores, bins);
        PrintHistogram(bins);
        double sd = Deviation(scores);
        cout << "SD: " << fixed << setprecision(4) << sd << endl;
    }
    else {
        cout << "No scores were entered." << endl;
    }

    return 0;
}
```