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#include <iostream>
#include "randomwalk.h"
#include <cmath>
#include <time.h>
using namespace std;
const double Rad_to_deg = 45.0 / atan(1.0);
// should be about 57.2957795130823

double direction;

int main () {

    srand(time(NULL));

    unsigned long max_steps;
    cout << "Enter number of steps (q to quit)\n";

    while (cin >> max_steps)
    {
        double dstep;
        cout << "Enter step length\n";
        cin >> dstep;

        unsigned long steps = 0;
        CVector result (0,0);
        while (steps < max_steps)
        {
            int direction_degrees = rand() % 360;
            direction = direction_degrees/Rad_to_deg;
            //CVector step (dstep*cos(direction),dstep*sin(direction));
            CVector dir (cos(direction),sin(direction));
            CVector step = dir*dstep;

            result = result + step;
            // cout << result.x << "," << result.y << endl;
            steps ++;
        }
        cout << "After " << max_steps << " steps the position is x = " <<
            result.x << ", y = " << result.y <<
            " and the distance from the origin is " << sqrt(result.x*result.x+
            result.y*result.y) << endl;
        cout << "Distance/sqrt(number of steps) = " << sqrt(result.x*result.x+
            result.y*result.y)/sqrt(max_steps)
            << endl;

        steps = 0;

        cout << "Enter number of steps (q to quit): ";
    }
    cout << "Bye!\n";
    // cin.clear();
    // while (cin.get() != '\n')
    // continue;
    system ("pause");
    return 0;
}

```