



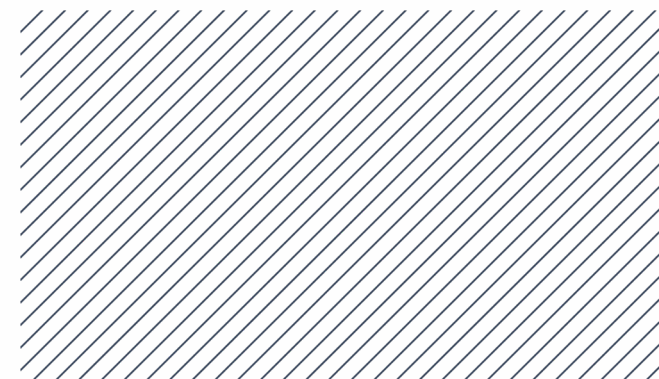
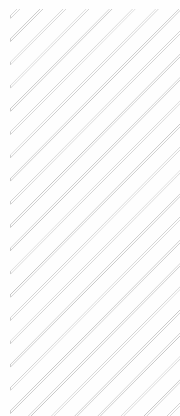
Lecture 8

Practice, pt.2

Konstantin Leladze

C++ Basics

DIHT MIPT 2021



Problem

A sequence of 2D points is specified as a sequence of pairs (x, y) .

It is necessary to find the perimeter of the polygon formed by a given set of points.

Points are given in order of counterclockwise traversal relative to the center of the polygon.

```
#include <iostream>
#include <cmath>

double dot_product (const double x1, const double y1, const double x2, const double y2) {
    return x1 * x2 + y1 * y2;
}

int main () {
    size_t n;
    std::cin >> n;
    double* const x = new double[n];
    double* const y = new double[n];
    double perimeter = 0.;

    for (size_t i = 0; i < n; i++)
        std::cin >> x[i] >> y[i];

    if (n >= 3)
        for (size_t i = 0; i < n; i++) {
            const size_t j = (i + 1) % n;
            const double v_x = x[j] - x[i];
            const double v_y = y[j] - y[i];
            perimeter += std::sqrt(dot_product(v_x, v_y, v_x, v_y));
        }

    std::cout << perimeter << std::endl;

    delete[] x;
    delete[] y;
    return 0;
}
```



Hints on the first contest

And then at the lecture, I told some hints about how to solve problems of the first contest...



Lecture 8

Practice, pt.2

Konstantin Leladze

C++ Basics

DIHT MIPT 2021

