Gungnir's Standard Code Library

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Dated: July 25, 2016

Contents

Chapter 1

Computational Geometry

1.1 2D

1.1.1 Basis

```
1  typedef double DB;
2  const eps = 1e-8;
3
4  __inline int sign(DB x) {
5      return x < -eps ? -1 : ( x > eps ? 1 : 0 );
6  }
7  __inline DB msqrt(DB x) {
8      return sign(x) > 0 ? sqrt(x) : 0;
9  }
10
11 struct Point {
12     DB x, y;
13     __inline Point(): x(0), y(0) {}
14     __inline Point(DB x, DB y): x(x), y(y) {}
15     __inline Point operator+(const Point &rhs) const {
16         return Point(x + rhs.x, y + rhs.y);
17     }
18     __inline Point operator-(const Point &rhs) const {
19         return Point(x - rhs.x, y - rhs.y);
20     }
21     __inline Point operator*(DB k) const {
22         return Point(x * k, y * k);
23     }
24     __inline Point operator/(DB k) const {
25         assert(sign(k));
26         return Point(x / k, y / k);
27     }
28 };
29
```

```
30 __inline DB dot(const P& a, const P& b) {
31     return a.x * b.x + a.y * b.y;
32 }
33
34 __inline DB det(const P& a, const P& b) {
35     return a.x * b.y - a.y * b.x;
36 }
```