Delaunay Triangulation

Randomized Incremental Construction

- Recursive Implementation

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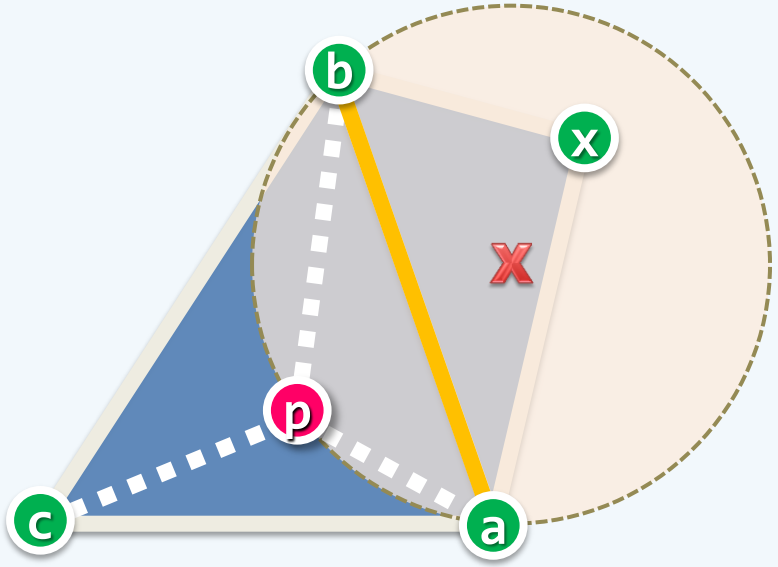
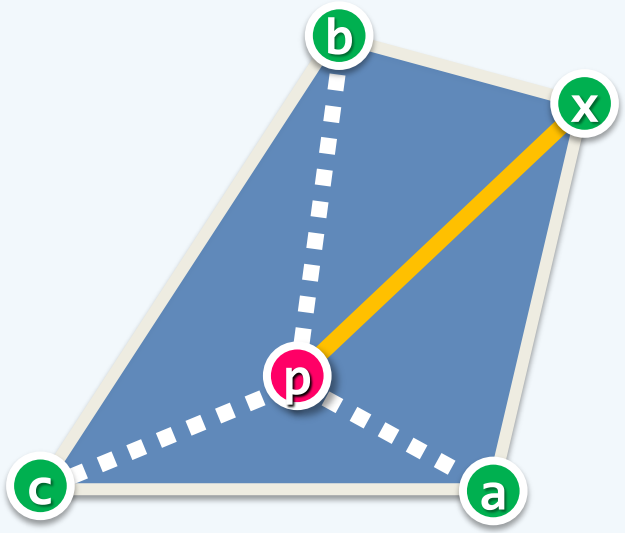
Insert (p)

```
// find the triangle containing p
    T(a, b, c) = TriangleContaining(DT, p);
// insert edges pa, pb and pc
    connect(p, a);
    connect(p, b);
    connect(p, c);
// fix ab, bc and ca
    swapTest( p, a, b, c );
```



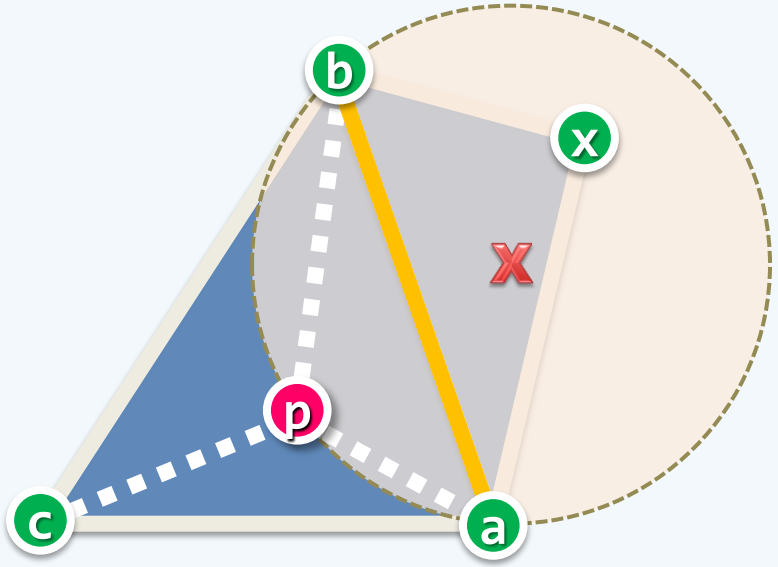


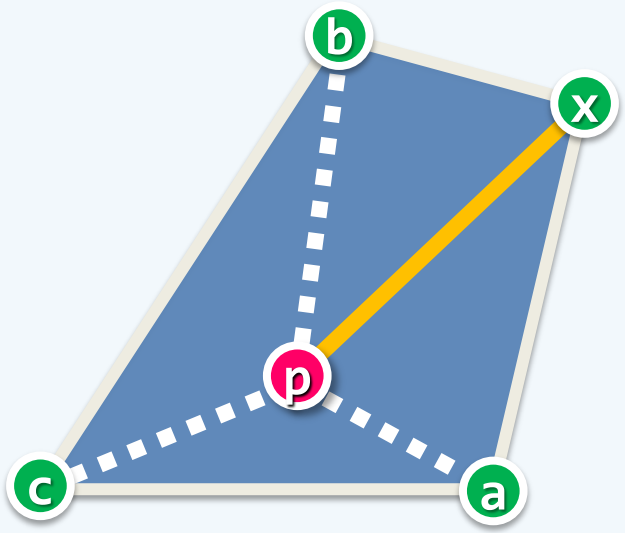
swapTest (p, a, b, c)

- sTest(p , a , b);

  sTest(p , b , c);

  sTest (p , c , a);





sTest (p, a, b)

```
// find the triangle (a, x, b) to the right of ab
   x = rightSite( a, b );
// in case x doesn't exist
   if ( ! x ) return;
// if x violates the in-circle condition
   if ( inCircle( p, a, b, x ) )
   // replace ab with px, and
      flipEdge( a, b, p, x );
   // test the new suspect edges
      sTest( p, a, x );  sTest( p, x, b );
```