06-G-05

Point Location

Kirkpatrick Structure

- Independent Subset

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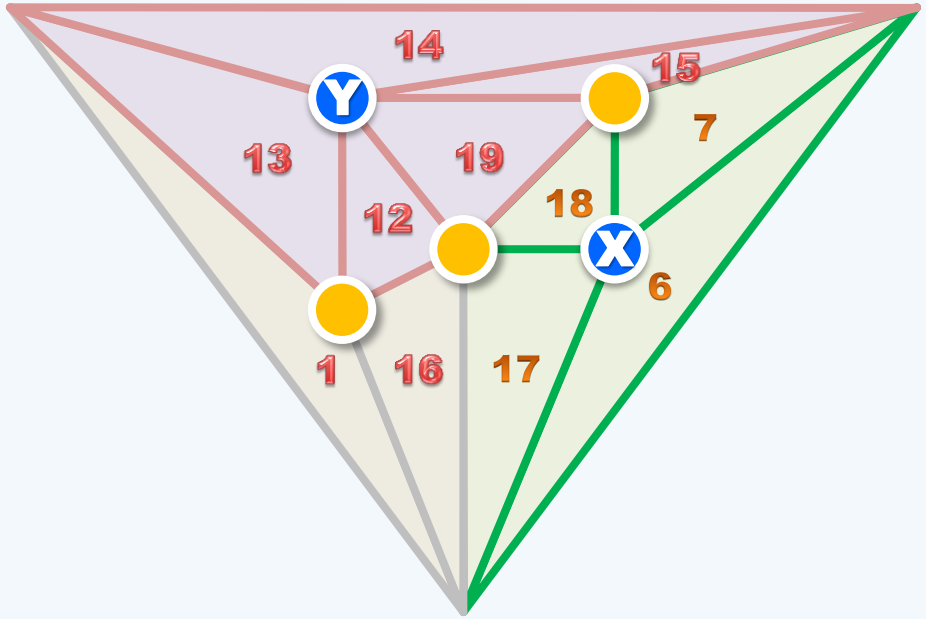
Non-overlapping Holes: Why

- The removal of a single vertex creates a hole, which
  - is **star-shaped** but not necessarily **convex**
  - will be **re-triangulated** independently
- So all the holes in current triangulation should not **overlap** with each other
- How could this be guaranteed here?



Non-overlapping Holes = Independent Subsets

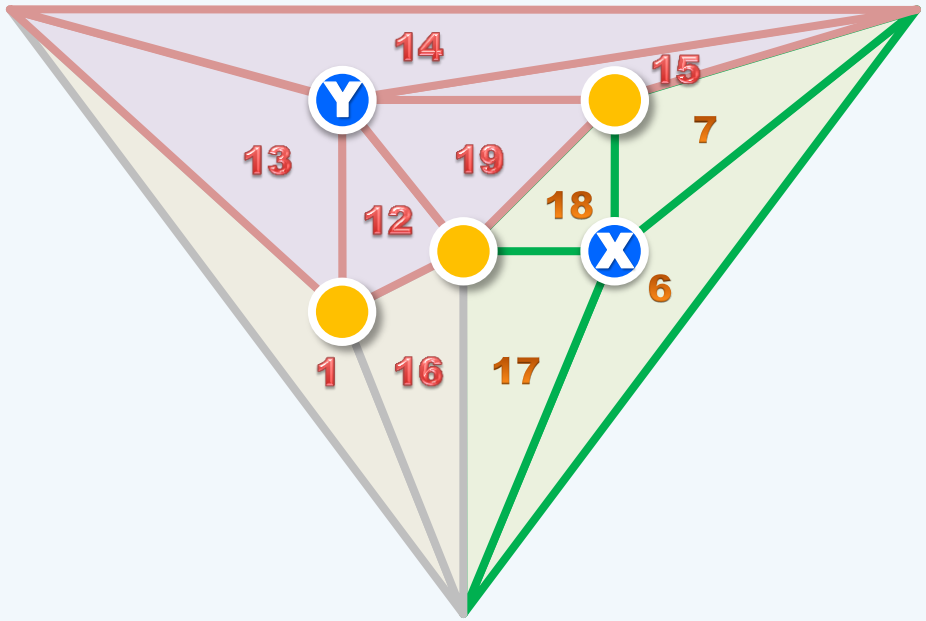
❖ Given a graph G = <V, E>,

- two vertices x and y in V are called **independent**

  if the segment xy ∉ E

- a subset U of V is called **independent**

  if any 2 vertices of U are **independent**



❖ When the removed vertices come from an IS

- the holes will **not overlap**; and thus

- each of them can be re-triangulated **independently** of one another