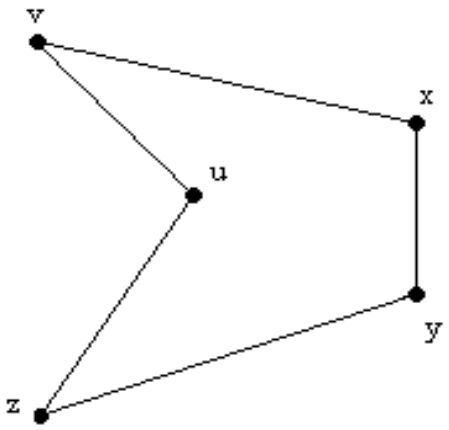
Problem

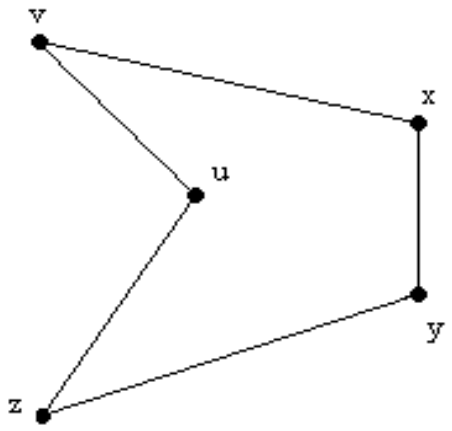
- Polygons have ears!

A simple polygon has an ear at vertex v if the triangle formed by v and its two adjacent vertices shares two edges with the polygon and the other edge lies completely in the interior of the polygon.



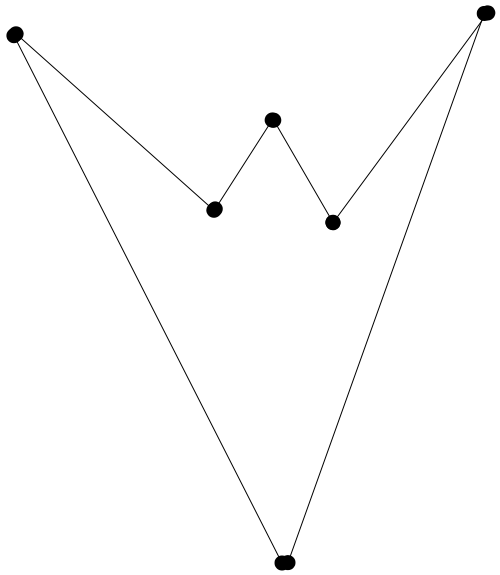
Problem

- Is an ear in the convex hull?



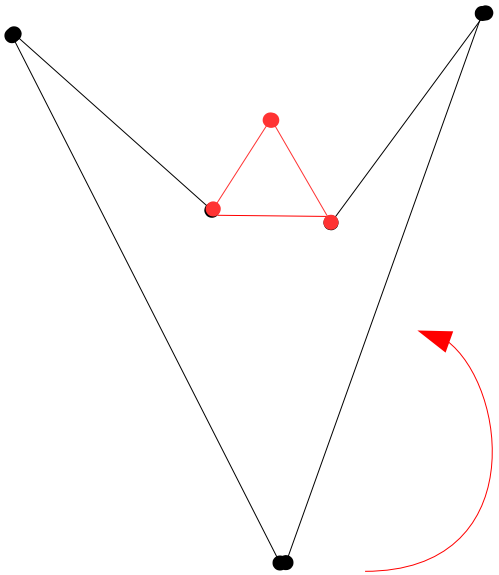
Problem

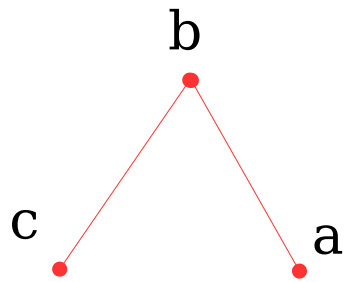
- Is an ear in the convex hull?



Problem

- Find local convexities

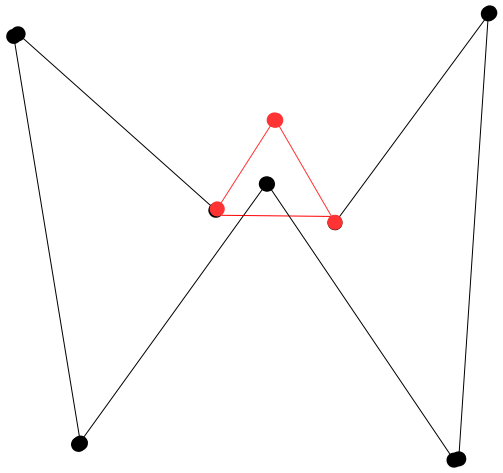


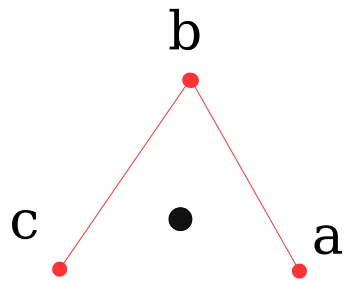


If CCW(a,b,c) > 0
then b is an hear

Problem

- An exception

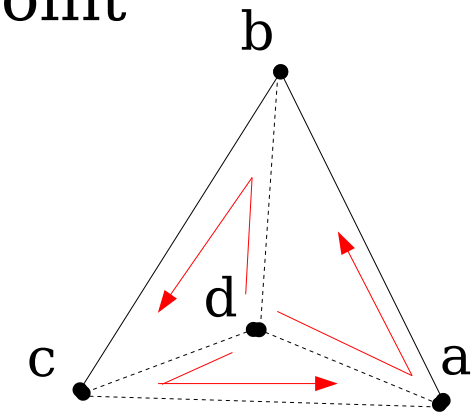




CCW(a,b,c) > 0 but b is not an hear!

Problem

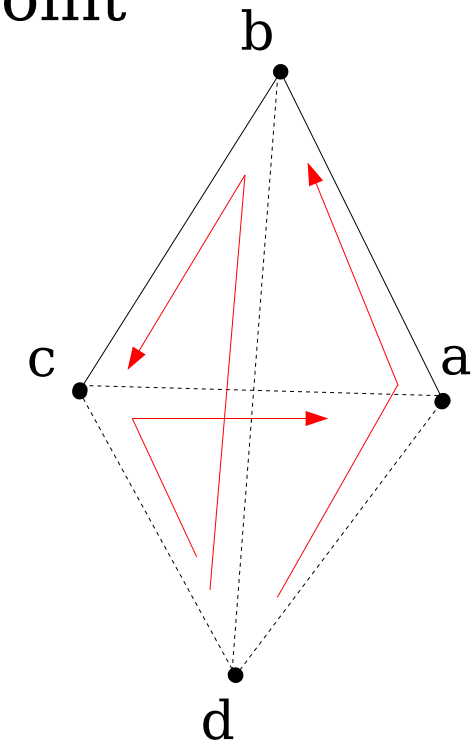
- How to detect if a point is inside a triangle?



CW(d,a,b) = CW(d,b,c) = CW(d,c,a) then d is inside triangle (a,b,c)

Problem

- How to detect if a point is inside a triangle?



Point b is an ear if, for every point d, CW(d,a,b) = CW(d,b,c) = CW(d,a,c) does not hold.