Simplicial Complex

- A <u>simplicial complex</u> is a finite set K of simplexes, satisfying the intersection condition:

$$\text{if } s, t \in K$$
$$\text{then } s \cap t = \begin{cases} \emptyset \\ \text{a simplex both of } s \text{ and of } t \end{cases}$$

- Neighborhoods in a simplicial complex:

For simplex $s \in K$

$$\text{star}(s; K) = \{s' \in K \ : \ s \leq s'\}$$

$$\overline{\text{star}}(s; K) = \{s' \in K \ : \ \exists t \in \text{star}(s; K) \ : \ s' \leq t\}$$

$$\text{link}(s; K) = \overline{\text{star}}(s; K) \setminus \text{star}(s; K).$$

s

star{s,K} $\overline{\text{star}}$ {s,K}

t

star{t,K} $\overline{\text{star}}$ {t,K}