20.1.2
Some graph theory
Some basic properties of Spanning Trees

- Tree = undirected graph in which any two vertices are connected by exactly one path.
- Tree = a connected graph with no cycles.
- Subgraph $H$ of $G$ is spanning for $G$, if $G$ and $H$ have same connected components.
- A graph $G$ is connected $\iff$ it has a spanning tree.
- Every tree has a leaf (i.e., vertex of degree one).
- Every spanning tree of a graph on $n$ nodes has $n - 1$ edges.
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Lemma 20.1.

\( T = (V, E_T) \): a spanning tree of \( G = (V, E) \). For every non-tree edge \( e \in E \setminus E_T \) there is a unique cycle \( C \) in \( T + e \). For every edge \( f \in C - \{e\} \), \( T - f + e \) is another spanning tree of \( G \).
THE END

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(for now)