

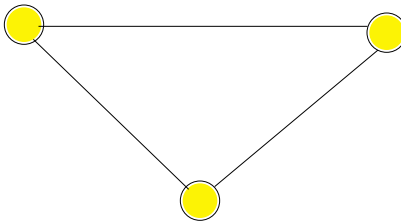
Section 7.1 Introduction to Graphs

Undirected Graphs

- A *simple* graph (V,E) consists of vertices, V , and edges, E , connecting distinct elements of V .

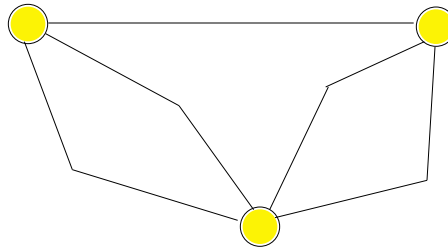
- no arrows
- no loops
- can't have multiple edges joining vertices

Example:



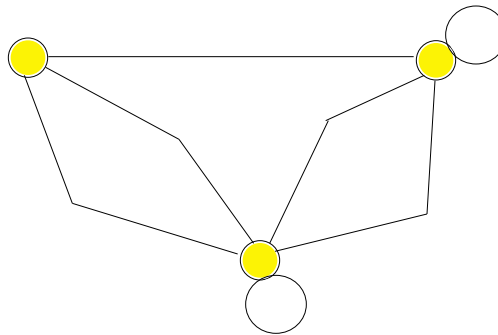
- A *multigraph* allows multiple edges for two vertices
 - redundancy in networks
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Example:



- A *pseudograph* is a multigraph which permits loops.
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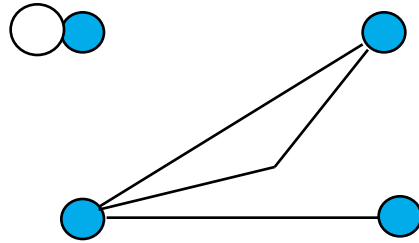
Example:



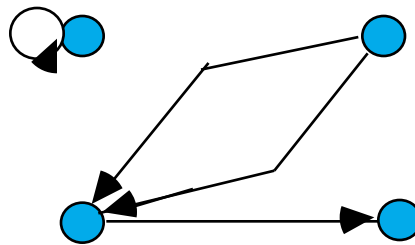
Directed Graphs

- Directed graph (V, E) - single directed edges between vertices
- Directed multigraph - multiple directed edges between vertices

Examples:



A pseudograph



A directed multigraph
