

Appendix 2 Glossary

The following definitions are taken from:

Gross, Jonathan L., and Jay Yellen. [Handbook of Graph Theory](#). New York: CRC, 2004

unless otherwise noted.

- **Weakly Connected**
 - A directed graph is said to be *weakly connected* if its underlying undirected graph is *connected*.
- **Connected**
 - An undirected graph is said to be *connected* "if there exists a walk between every pair of its vertices."
- **Mutually Reachable**
 - "Let u and v be vertices in a digraph G . Then u and v are said to be *mutually reachable* in G if G contains both a directed u - v walk and a directed v - u walk. Every vertex is regarded as reachable from itself (by the trivial walk)."
- **Strongly Connected**
 - "A digraph is *strongly connected* if every two vertices are *mutually reachable*."
- **Strong Component**
 - "A *strong component* of a digraph G is a maximal strongly connected subgraph of G . Equivalently, a *strong component* is a subdigraph induced on a maximal set of *mutually reachable* vertices."
- **Component**
 - "The subgraphs of G which are maximal with respect to the property of being *connected* are called the components of G ."
- **Graph Density**
 - "The density of a graph is the ratio of the number of edges and the number of possible edges." (from [igraph library documentation](#)).