# Data Structure(Graph) Cheat Sheet

by mahmoudkamal via cheatography.com/144768/cs/31089/

## Definition of Graph

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|---|---|
| Graphs are non-linear data structures made up of two major components: | |
| Vertices: are entities in a graph | Edges: represent the relationship between the vertices in the graph |
| Graph's Goal | |
| Used to visualize organized data and to represent places and the distance between them. | |
| Types of Graphs: | Based on Direction: |
| Based on Direction: | Undirected Graphs: edge(x,y) == edge(y,x) |
| | Directed Graphs: edge(x,y) != edge(y,x) |

## Data Structure(Graph)

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| Based on Weights: | Weighted Graphs: every edge has a value |
| | Unweighted Graphs: does not have a value associated with every edge. |
| Special Graphs: | Trees, Directed Acyclic Graphs, Complete Graphs |
| Implementation: | |
| | Graphs are easily built out of lists and dictionaries as in figure(1). |
| | This graph has six nodes (A-F) and eight edges as in figure(2). |



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