A Simple Introduction to Graph Theory

Leisha Fortunat
A **Vertex** is a labeled point placed on a graph

{Vertices plural }

An **Edge** is a line segment
Set : is a notation identifying specific objects
A graph is a set of points (vertices) where you draw lines (edges) between it.
An application of graph theory

A publishing company is trying to set a schedule with its editors. They want there 10 editors to meet into 5 committees. There are a few pairs of the committees that aren't able to meet during the same time because 1 or 2 of their editors are on both committees. The editors decided on the five committees:
5 committees : vertices
10 editors : number of people
- C1. \{1,2,3,4\}
- C2. \{3,4,5\}
- C3. \{3,6,7,8,9\}
- C4. \{1,2,10\}
- C5. \{7,8,9,10\}
Introduction to common graphs

- Complete
- Cycle
- Path
Complete Graph

A graph where every vertex forms an edge with every other vertices.

Symbol: K

Formula for # of edges : n(n-1)/2
Cycle Graph

A graph that starts and ends at the same vertex and can easily be stretched out.

Symbol: C

Formula for # of edges: \( N \)
Path graph

A physical representation of a route of vertices. Simply it's a straight line or shape that isn't closed.

Symbol: P

Formula for # of edges \( \{ n-1 \} \)
Sources

A first course in Graph theory by Gary Chartrand & Ping Zhang
Thank You