

## Week-1 and 2: Basics of graphs:

- Introduction graphs
- Definition of graph (undirected/directed)
- Representation of graphs
  - Adjacency matrix, incidence matrix, adjacency list, edge list, forward star and reverse star
- Different classes of graphs
  - Bipartite graph
  - Complete graph
  - Regular graph
  - Planar graph
- Connected vs disconnected graphs
- Path, walk, tour, cycle, Hamiltonian cycle, Euler tour
- Graph isomorphism, graphic sequence
- Subgraph, super graph, induced sub graph

## Resources:

1. video lectures 01 to 07, 09, 10, 12, 16 to 19 of Video lectures [By Sarada Herke](#)
2. [Recorded Video](#) on Graph representations
3. Module-1 (Preliminaries) of [graph theory course](#) by NPTEL
4. [graph representations](#)
5. [tutorial on path, walk, trail](#)