## Course Introduction

1. This lecture is going to provide all tools you need to cover 80% of all graph problems.
2. The key to victory for your data structures and algorithms, and especially your graphs, is to visualize things.
3. We will go through different animations to understand the algorithm deeply.
4. General Roadmap

* We will go over all the strategies and theories.
* Sketch out a nice meaningful picture.
* Talk about the complexity of the algorithm in the approach video
* Followed every approach; we are also going to implement the code, of course

## Graph Basics

### What is a graph?

Graph=nodes + edges

Nodes🡪 Also known as vertexes. They are some tiny circles with data (number, letter, etc.) inside of them

Edges🡪 any connections between nodes

A graph can be described as relations between things.

### Directed Graph vs Undirected Graph

A picture containing chart

Description automatically generatedA picture containing text, wall

Description automatically generated

1. The directed graph has arrowheads along the edges (consider directions), while the undirected graph does not have arrow heads. (NOT consider directions)