

Data Structure Assignment_1:

Name: Shahad Haider

Major:SWE.

Question: What are the differences between Adjacency Matrix and Adjacency List?

Adjacency List	Adjacency Matrix	Feature
An array of linked lists	A 2D array of size $V \times V$	Basic Idea
Saves space: $O(V + E)$	Consumes more space: $O(V^2)$	Memory (Space)
Sparse Graphs (Few edges)	Dense Graphs (Many edges)	Best Used For
Slower: $O(V)$	(1)Very fast: O	Edge Search
(1)faster: O Easier and	Costly and slow: $O(V^2)$	Adding a Vertex
A list of connected nodes	A table of 0s and 1s	Visual Look