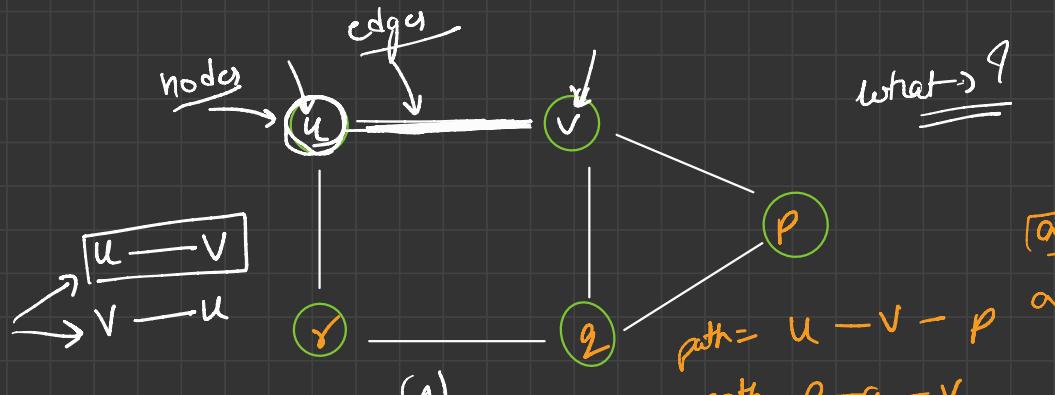



Graph

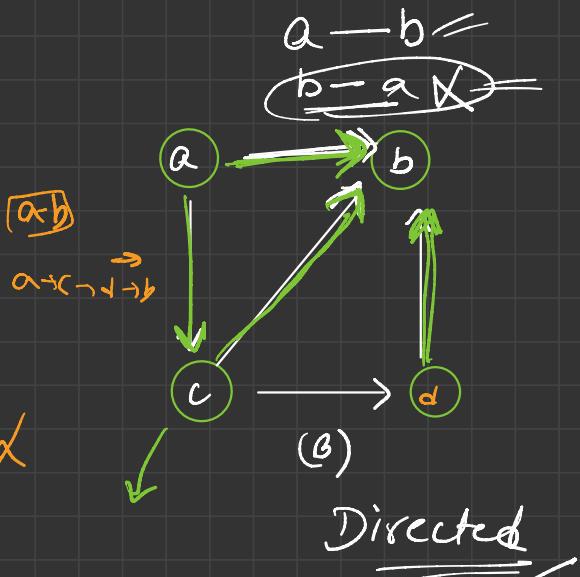
types :-



(A) Undirected

$$\boxed{\text{Degree}(v) = 3}$$

- \rightarrow Node \Rightarrow entity to store data/
- \rightarrow edge \Rightarrow connecting node



(B) Directed

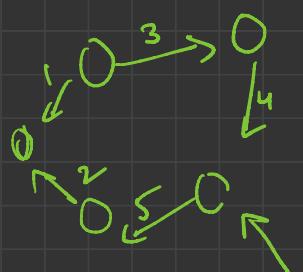
Outdegree (a) = 2



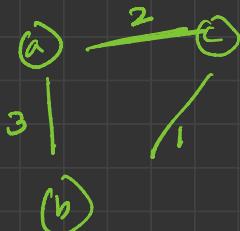
weighted graph

undirected

directed



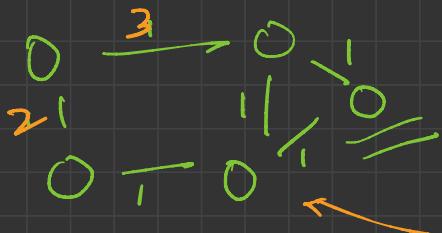
weighted directed graph



$a - c \rightarrow 2$

$a - b \rightarrow 3$

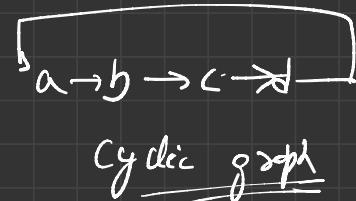
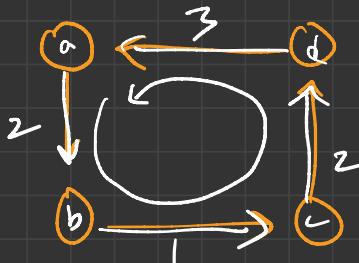
$b - c \rightarrow 1$



weighted undirected graph

\Rightarrow Path:

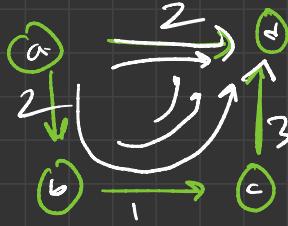
\rightarrow Cyclic graph



weighted cyclic directed graph

\rightarrow Acylic graph

weighted acyclic directed graph



→ Graph:-

Adjacency matrix
Adjacency List

→ Adjacency matrix

0	1	2
0	0	0
1	0	1



i/p ↴

→ number of nodes (n)

→ no. of edges (Bn)

$n=3, m=3$

0 → 1

1 → 2

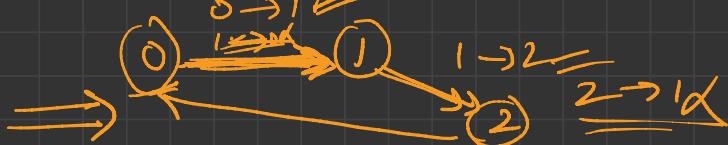
2 → 0

0 → 1

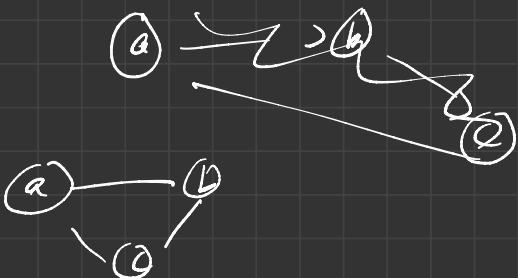
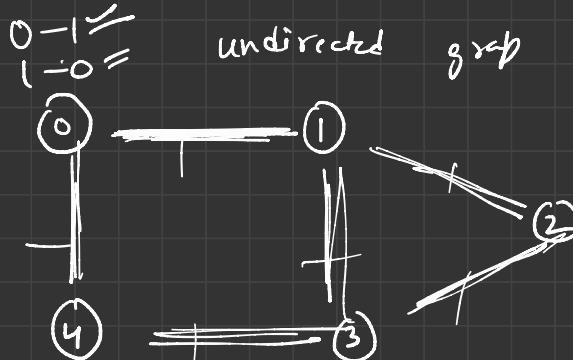
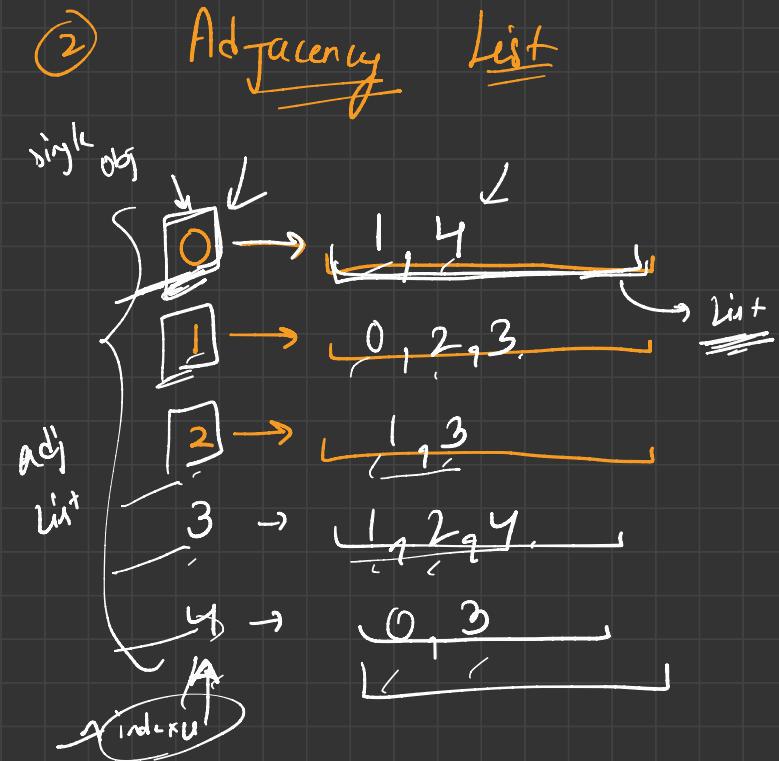
1 → 2

2 → 1

edges
 $m=3$



$S.C \rightarrow O(n^2)$



→ Implementation:-

adj list

vector < vector<int>) ↘

map < int
 char, list<int> >; ↘

strm
z

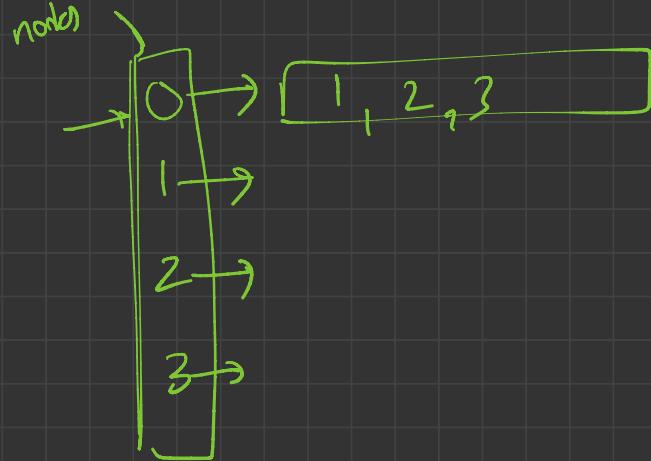
0 — 1

0 → 1

ord ≡ $\begin{cases} 0 \rightarrow 1 \\ 1 \rightarrow 0 \end{cases}$

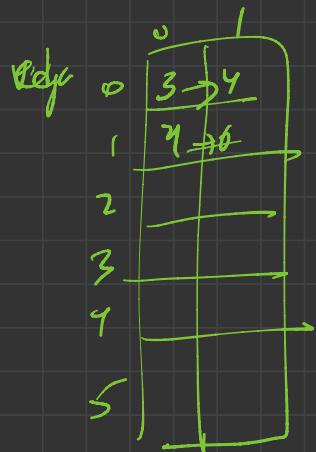
0 → 1
L → 0 ↘

vector < vector < int > >



ans

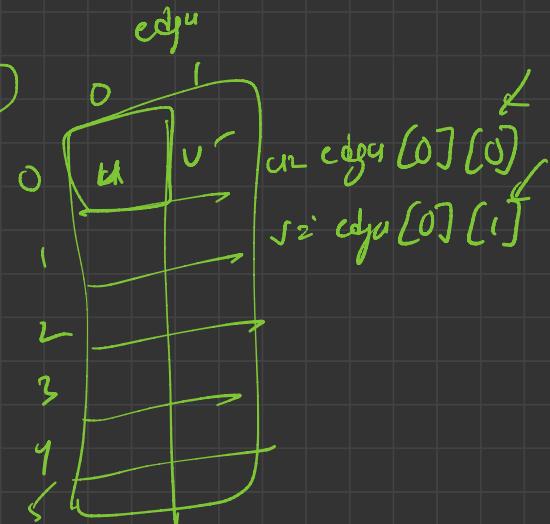
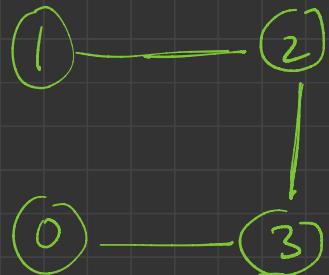
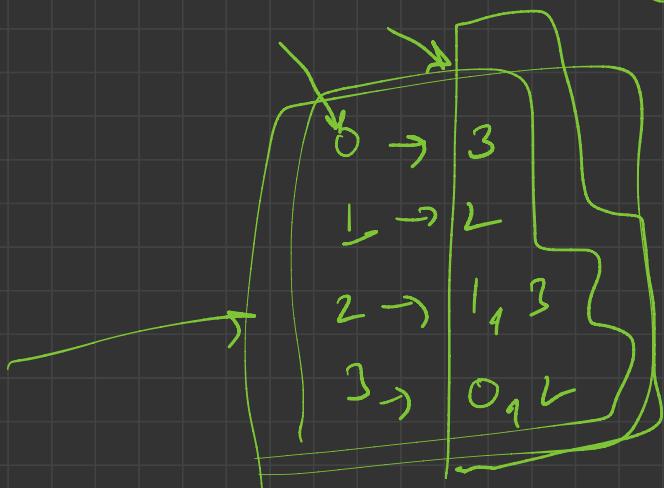
u → v

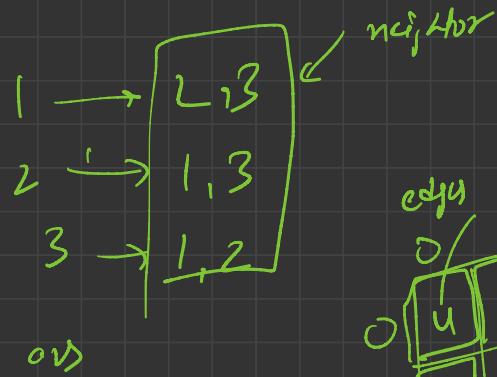
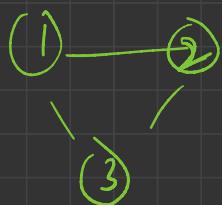


1 - 2

0 - 3

2 - 3





Ques/
 Add edge] (T-C / S-C)
 Point ↓
Comments

