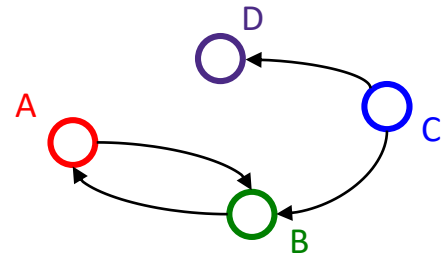


# Adjacency Matrix: Properties (1 of 3)

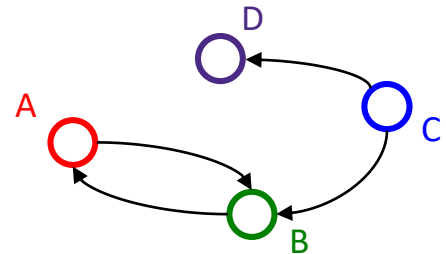
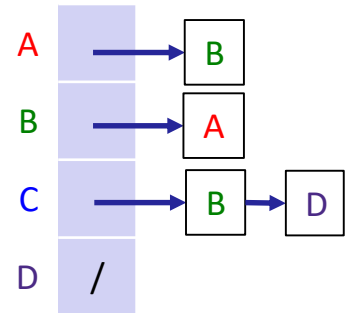
- ❖ Running time to:
  - Get a vertex's out-edges:
  - Get a vertex's in-edges:
  - Decide if some edge exists:
  - Insert an edge:
  - Delete an edge:
- ❖ Space requirements:
- ❖ Best for sparse or dense graphs?

	A	B	C	D
A	F	T	F	F
B	T	F	F	F
C	F	T	F	T
D	F	F	F	F



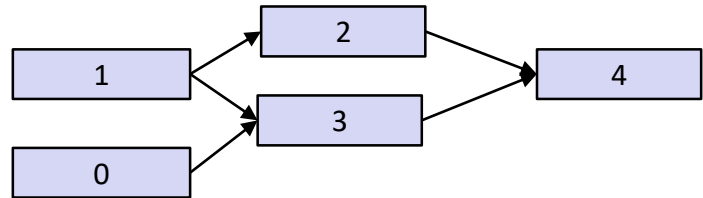
# Adjacency List: Properties (1 of 3)

- ❖ Running time to:
  - Get a vertex's out-edges:
  - Get a vertex's in-edges:
  - Decide if some edge exists:
  - Insert an edge:
  - Delete an edge:
- ❖ Space requirements:
- ❖ Best for sparse or dense graphs?



# Activity: Valid Topological Sorts

- ❖ List 3 valid sorts:



- ❖ Why do we perform topological sorts only on DAGs?
- ❖ Does a DAG always have a unique answer?
- ❖ What DAGs have exactly 1 answer?
- ❖ Terminology: A DAG represents a *partial order*, and a topological sort produces a *total order* that is consistent with it