Single-source shortest paths for a DAG
SINGLE-SOURCE SHORTEST PATHS FOR A DAG

1) Topological sort
Single-source shortest paths for a DAG

1) Topological sort

2) For each $v_i$ in t-sorted order
   RELAX all outgoing edges
1) **Topological sort**

2) For each $v_i$ in t-sorted order
   RELAX all outgoing edges
Single-source shortest paths for a DAG

1) Topological sort

2) For each $v_i$ in t-sorted order
   RELAX all outgoing edges
SINGLE-SOURCE SHORTEST PATHS FOR A DAG

1) Topological sort

2) For each $v_i$ in $t$-sorted order
   RELAX all outgoing edges
1) Topological sort

2) For each $v_i$ in topologically sorted order
   RELAX all outgoing edges
1) Topological sort

2) For each $v_i$ in t-sorted order
   RELAX all outgoing edges
Single-source shortest paths for a DAG

1) Topological sort

2) For each \( v_i \) in t-sorted order, relax all outgoing edges

\[ \text{time?} \]
1) Topological sort \( O(V+E) \) … or \( O(E) \) in component of source

2) For each \( v_i \) in t-sorted order
RELAX all outgoing edges \( O(V+E) \)