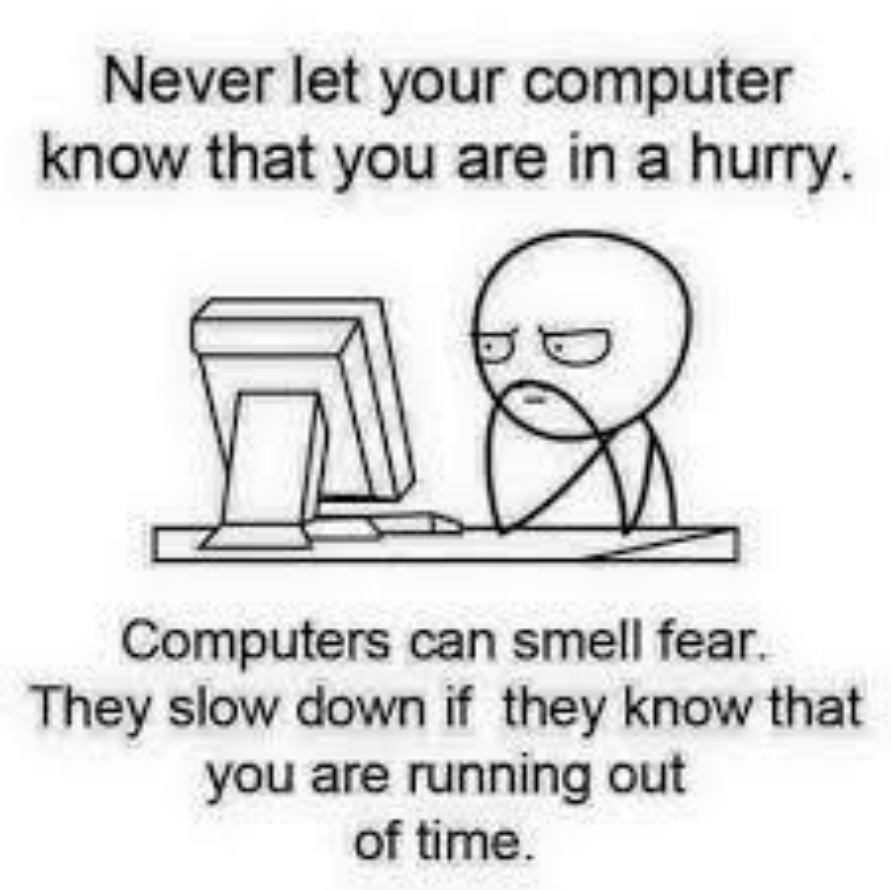
CS 310


Never let your computer know that you are in a hurry.
Computers can smell fear. They slow down if they know that you are running out of time.

Find single source **shortest paths** in a **DAG**

Find single source shortest paths in a DAG

G(V,E) is a DAG. Let ‘S’ be a source vertex. Assuming there are no incoming edges into node ‘S’. w(u,v) is weight of edge (u,v).

ALGORITHM:-

1. Find topological ordering of vertices in G
2. Initialize for all $u \in V$ $dist(u) = \infty$
3. dist[S] = 0;
4. for each $u \in V$ in the topological ordering
5. for each edge (u,v) in E
6. dist(v) = min (dist(v), dist(u) + w(u,v))

Find single source shortest paths in a DAG

Running time?

Find single source shortest paths in a DAG

Running time : $O(m+n)$