



## detect cycle

1. we need check the cycle starting from every vertex
2. then we need a visited flag to avoid repeat
3. when we think we find a cycle? when we meet a vertex we already visited?

No!

for above example, we already visited 3 when we visit from 1.

When we visit starting from 4, we found 3 already visited but it's not cycle. So the criteria to decide a cycle is a vertex visited twice in starting from the same vertex. So we need another flag to remember the vertex we visited in one path.