**Strongly Connected Components**

**Definition** A strongly connected component of a directed graph $G$ is a maximal set of vertices $C \subseteq V$ such that for every pair of vertices $u$ and $v$, there is a directed path from $u$ to $v$ and a directed path from $v$ to $u$.

**Strongly-Connected-Components($G$)**

1. call $\text{DFS}(G)$ to compute finishing times $f[u]$ for each vertex $u$
2. compute $G^T$
3. call $\text{DFS}(G^T)$, but in the main loop of DFS, consider the vertices in order of decreasing $f[u]$ (as computed in line 1)
4. output the vertices of each tree in the depth-first forest formed in line 3 as a separate strongly connected component
DFS
$G^T$
DFS in $G^T$
Solution