

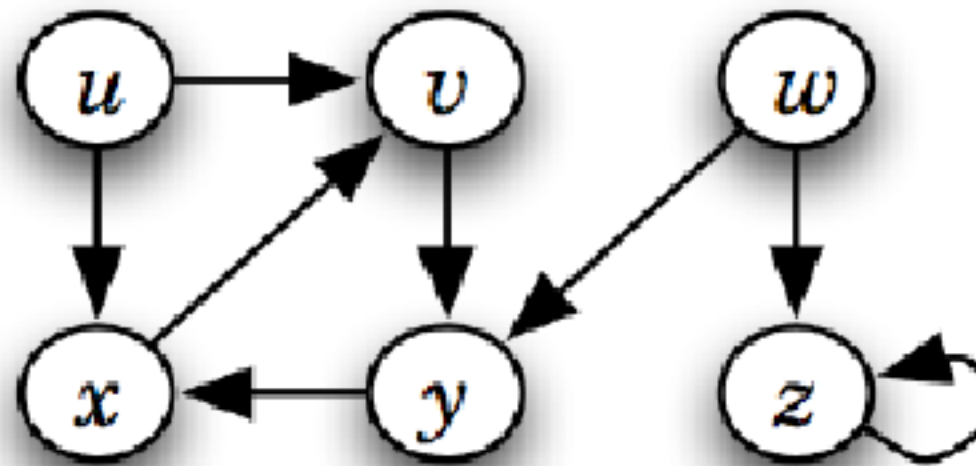
Application of DFS

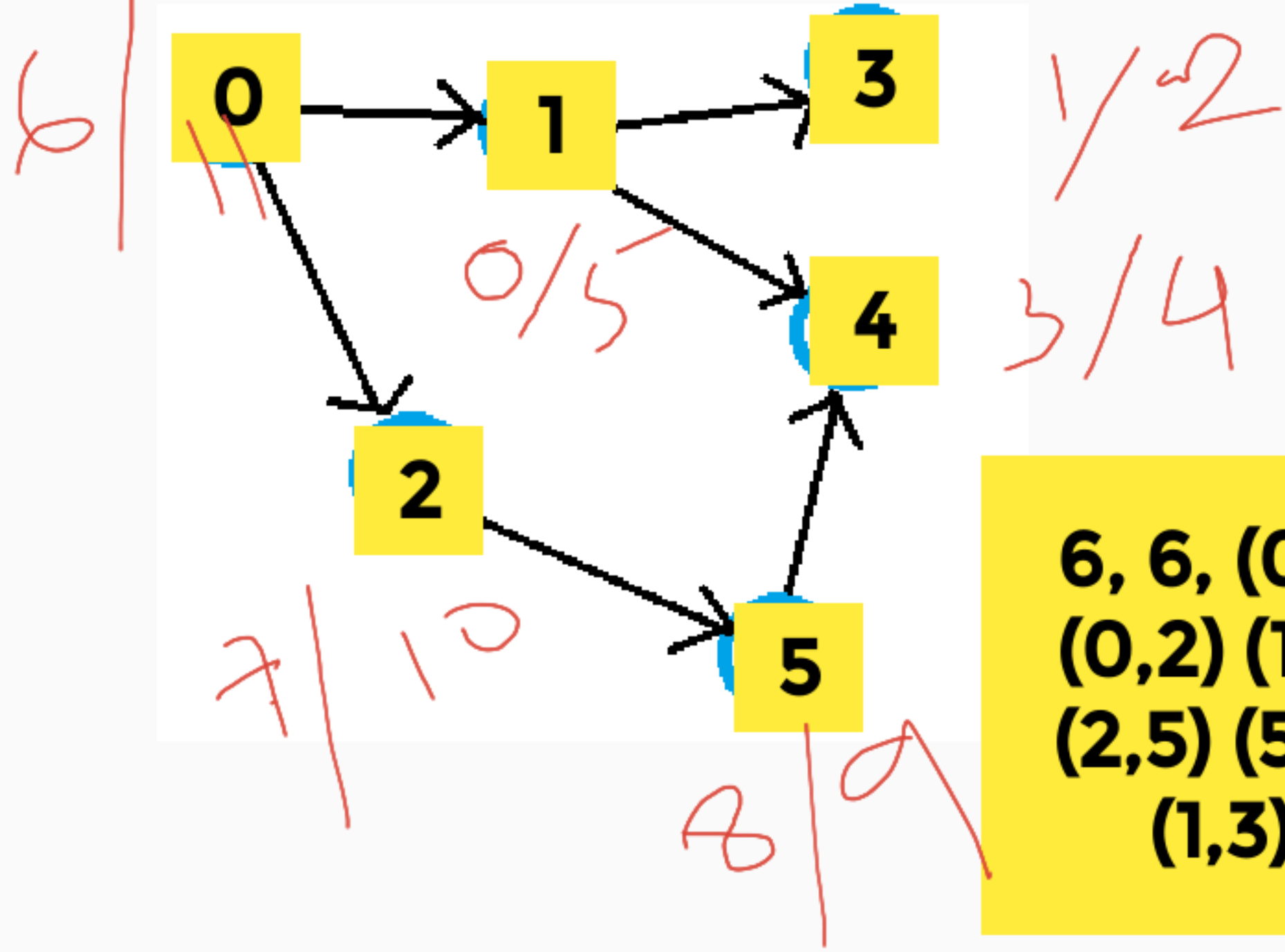
$\text{DFS}(G) \triangleright G = (V, E)$

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1  for each vertex  $u \in V[G]$ 
2      do  $\text{color}[u] \leftarrow \text{WHITE}$ 
3       $\pi[u] \leftarrow \text{NIL}$ 
4   $\text{time} \leftarrow 0$ 
5  for each vertex  $u \in V[G]$ 
6      do if  $\text{color}[u] = \text{WHITE}$ 
7          then  $\text{DFS-VISIT}(G, u)$ 
```

$\text{DFS-VISIT}(G, u)$

```
1   $\text{color}[u] \leftarrow \text{GRAY}$ 
2   $\text{time} \leftarrow \text{time} + 1$ 
3   $d[u] \leftarrow \text{time}$ 
4  for each vertex  $v \in \text{Adj}[u]$ 
5      do if  $\text{color}[v] = \text{WHITE}$ 
6          then  $\pi[v] \leftarrow u$ 
7           $\text{DFS-VISIT}(G, v)$ 
8   $\text{color}[u] \leftarrow \text{BLACK}$ 
9   $f[u] \leftarrow \text{time} + 1$ 
```





6, 6, (0,1)
(0,2) (1,4)
(2,5) (5,4)
(1,3)