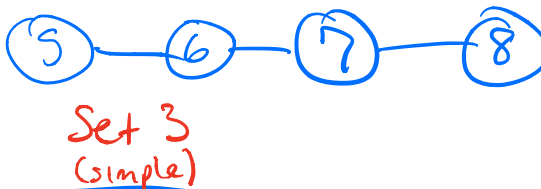
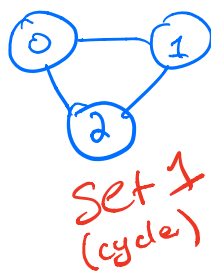
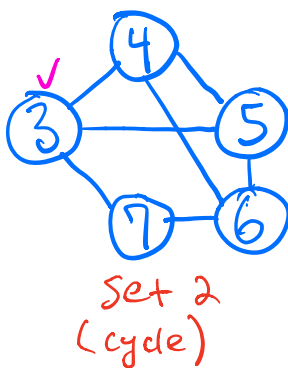
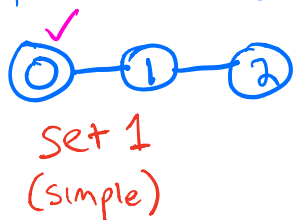


# Sample Disjointed Sets



## Challenge Disjointed Sets



Leader

0 = -1

1 = 0

2 = 0

3 = -1

4 = 3

5 = 3

6 = 3

7 = 3

Cycle?

0 = False ✓

1 = " } ignore

2 = " } ignore

3 = True ✓

4 = " } ignore

5 = " } ignore

6 = " } ignore

7 = " } ignore

## Steps

①  $\text{dsunion}(0, 1)$

②  $i\text{-had\_cycle} = \text{query\_cycle}(0)$

$\text{find\_leader}(0)$

└ leader(0) < 0? yes

└ return has\_cycle(0) false

false

③  $j\text{-had\_cycle} = \text{query\_cycle}(1)$

same as above

④  $\text{root}_i = \text{find\_leader}(0)$

leader(0) < 0? yes

$\text{root}_i = 0$

⑤  $\text{root}_j = \text{find\_leader}(1)$

same as above

$\text{root}_j = 1$

⑥ if ( $\text{root}_i \neq \text{root}_j$ )

leader[0] = 1

$\text{root}_i(0) = \text{root}_j(1)$

