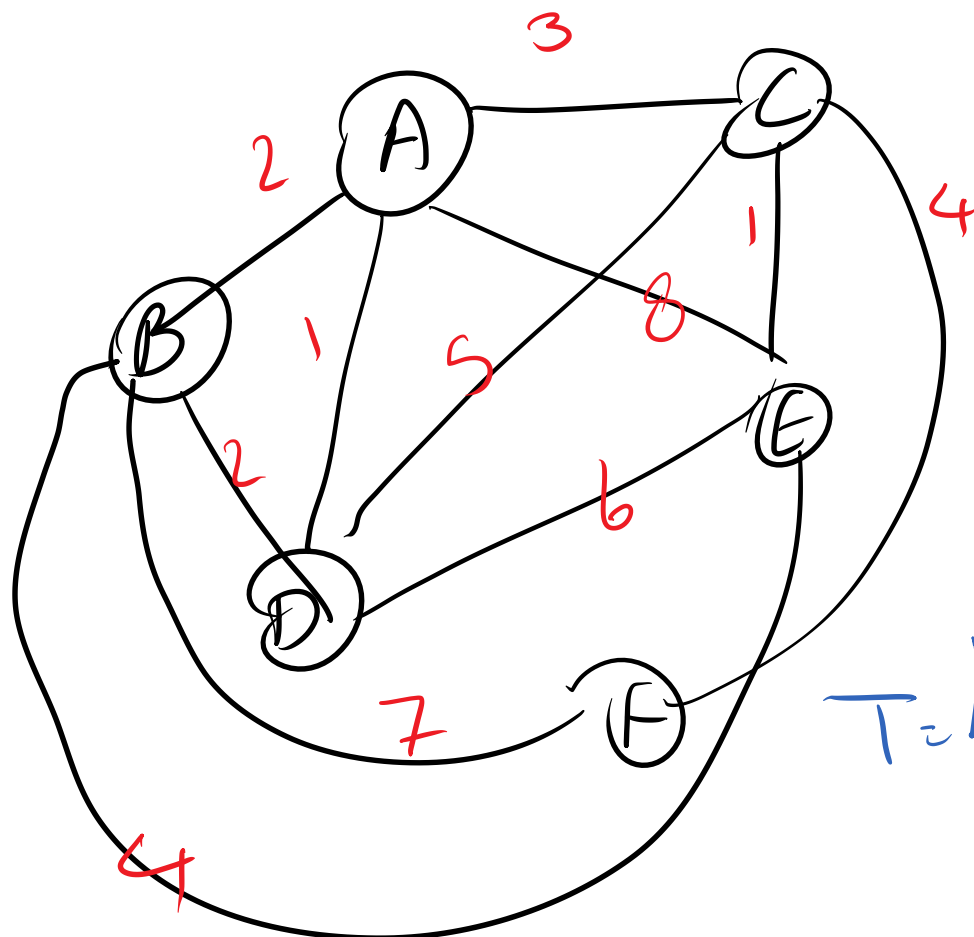


کراسکی



$\{A, B, C, D, E\}$   ~~$\{A, B, C, D\}$~~

~~$\{A\}$~~   ~~$\{B\}$~~   ~~$\{C\}$~~   ~~$\{D\}$~~   ~~$\{E\}$~~   ~~$\{F\}$~~   ~~$\{A, D\}$~~   ~~$\{C, E\}$~~

~~$\{A, D\}$~~   ~~$\{C, E\}$~~

$T = \{(A, D), (C, E), (A, B), (A, C), (C, F)\}$

kruskal ( $G(V, E)$ ):

$n = |V|$  ;  $T = \{\}$  ; split  $V$  into  $n$  sets;

• Sort( $E$ )  $\rightarrow O(E \log E)$

while  $|T| \neq n - 1$  :

}

Select  $C = (u, v)$

$S_1 = \text{findset}(u)$

$S_2 = \text{findset}(v)$

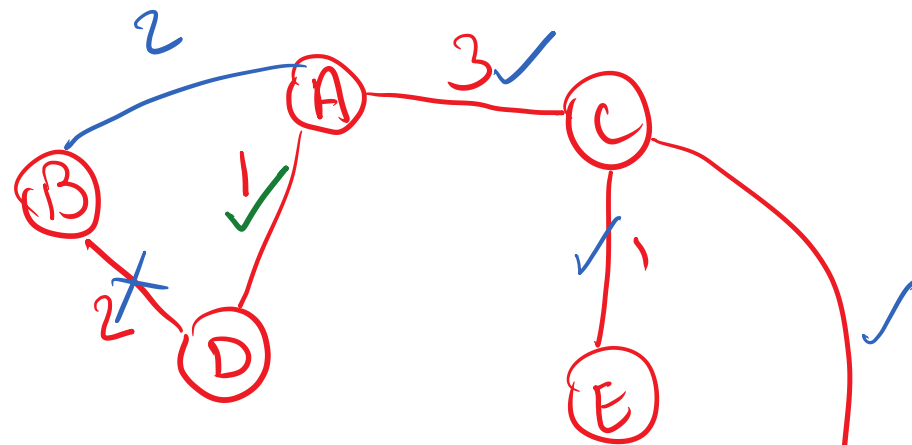
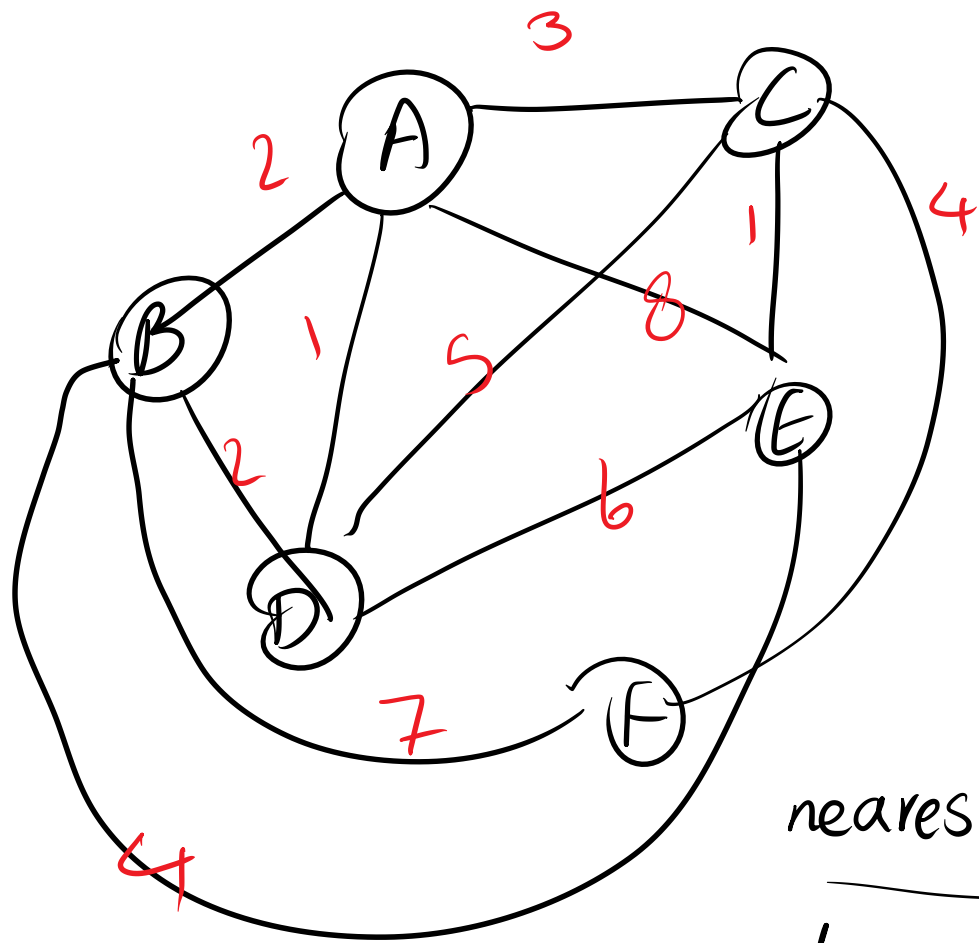
if

$S_1 \neq S_2$  :  
 $\text{merge}(S_1, S_2)$

$T = T \cup C$

}

return  $T$



Σ

	A	B	C	D	E	F
nearest	A	A	A	A	<del>A</del> C	<del>A</del> B, C
distance	•	<del>2</del>	<del>3</del>	1	<del>8</del> 6	<del>∞</del> 4

Prim (L) :

$T = \{ \}$ , nearest = zeros(1, n)  
distance = //

for  $i = 1 \rightarrow n$  :

nearest[i] = 1 ; distance[i] = L[1, i]



repeat  $n-1$  times:

$min = -\infty$

for  $i: 2 \rightarrow n$ :

if  $(-1 < dist[i] < min)$

$min = dist[i]$

$k = i$

$dist[k] = -1$

$T = T \cup \{k, nearest[k]\}$

$(n-1) \left( (n-1) + (n-1) \right)$

for  $i: 2 \rightarrow n$ :

if  $L[i, k] < dist[i]$

$dist[i] = L[i, k]$

$nearest[i] = k$

return  $T$

$O(n)$

$i_j$   
 $\rightarrow O(n^2)$

کڑکڑ



$$O(E \log E)$$

$$O(n^2)$$

$O(E \log E)$   
 $O(n^2)$   
 حل  
 $n-1 < E < \frac{n(n-1)}{2}$   
 $O(n) < E < O(n^2)$

























