

MST-REDUCE(G, T)

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1  for each vertex  $v \in G.V$ 
2       $v.mark = \text{FALSE}$ 
3      MAKE-SET( $v$ )
4  for each vertex  $u \in G.V$ 
5      if  $u.mark == \text{FALSE}$ 
6          choose  $v \in G.Adj[u]$  such that  $(u, v).c$  is minimized
7          UNION( $u, v$ )
8           $T = T \cup \{(u, v).orig\}$ 
9           $u.mark = \text{TRUE}$ 
10          $v.mark = \text{TRUE}$ 
11   $G'.V = \{\text{FIND-SET}(v) : v \in G.V\}$ 
12   $G'.E = \emptyset$ 
13  for each edge  $(x, y) \in G.E$ 
14       $u = \text{FIND-SET}(x)$ 
15       $v = \text{FIND-SET}(y)$ 
16      if  $u \neq v$ 
17          if  $(u, v) \notin G'.E$ 
18               $G'.E = G'.E \cup \{(u, v)\}$ 
19               $(u, v).orig' = (x, y).orig$ 
20               $(u, v).c' = (x, y).c$ 
21          elseif  $(x, y).c < (u, v).c'$ 
22               $(u, v).orig' = (x, y).orig$ 
23               $(u, v).c' = (x, y).c$ 
24  construct adjacency lists  $G'.Adj$  for  $G'$ 
25  return  $G'$  and  $T$ 
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