

**Algorithm Design**  
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**Solution of Exercise C-2.21**

**Algorithm** LCA(Node  $v$ , Node  $w$ ):

```
int  $v_{dpth} \leftarrow v.depth$ 
int  $w_{dpth} \leftarrow w.depth$ 
while  $v_{dpth} > w_{dpth}$  do
     $v \leftarrow v.parent$ 
while  $w_{dpth} > v_{dpth}$  do
     $w \leftarrow w.parent$ 
while  $v \neq w$  do
     $v \leftarrow v.parent$ 
     $w \leftarrow w.parent$ 
return  $v$ 
```