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1: begin
2:  $commitsToDelete \leftarrow previousSnapshot \setminus currentSnapshot$ 
3: delete  $commitsToDelete$  from  $database$ 
4:
5:  $newCommits \leftarrow currentSnapshot \setminus previousSnapshot$ 
6:  $commitsToInsert \leftarrow newCommits \setminus db.commits$ 
7:  $commitsToUpdate \leftarrow \{c \mid c \in db.commits \wedge ((rep.pullsFrom \cup rep.pushesTo) \setminus c.foundIn) \neq \emptyset\}$ 
8:
9: for each  $c \in commitsToInsert$  do
10:    $UPDATEFOUNDIN(c, rep, currentSnapshot)$ 
11: end for
12:
13: for each  $c \in commitsToUpdate$  do
14:    $UPDATEFOUNDIN(c, rep, currentSnapshot)$ 
15: end for
16:
17: insert  $commitsToInsert$  into  $database$ 
18: update  $commitsToUpdate$  in  $database$ 
19:  $orphanedCommits \leftarrow \{c \mid c \in db.commits \wedge c.foundIn = \emptyset\}$ 
20: delete  $orphanedCommits$  from  $database$ 
21: end
22:
23: procedure  $UPDATEFOUNDIN(c: CommitInfo, rep: RepositoryInfo, currentSnapshot: Set of CommitInfo)$ 
24:    $isAhead \leftarrow c \in currentSnapshot \wedge \exists r (r \in rep.pushesTo \wedge c \notin r.commits)$ 
25:    $isBehind \leftarrow c \notin currentSnapshot \wedge \exists r (r \in rep.pullsFrom \wedge c \in r.commits)$ 
26:
27:   if  $isBehind$  then
28:      $c.foundIn \leftarrow c.foundIn \cup \{r \mid r \in rep.pullsFrom \wedge c \in r.commits\}$ 
29:   end if
30:   if  $isAhead$  then
31:      $c.foundIn \leftarrow c.foundIn \cup rep \cup \{r \mid r \in rep.pushesTo \wedge c \in r.commits\}$ 
32:   end if
33:   if  $(\neg(isBehind) \wedge \neg(isAhead))$  then
34:     if  $c \notin currentSnapshot$  then
35:        $c.foundIn \leftarrow ((c.foundIn \setminus rep) \setminus rep.pushesTo) \setminus rep.pullsFrom$ 
36:     else
37:        $isTracked \leftarrow \exists b (b \in rep.branches \wedge c \in b.reachableCommits)$ 
38:       if  $isTracked$  then
39:          $c.foundIn \leftarrow c.foundIn \cup rep \cup rep.pushesTo \cup rep.pullsFrom$ 
40:       else
41:          $c.foundIn \leftarrow rep$ 
42:       end if
43:     end if
44:   end if
45: end procedure

```