
Algorithm 1: Handling Inconsistent Blockchain Views (G_0, B_0)

Input: Blockchain graph G_0 , genesis block B_0

Output: Main View v_0

```
1  $S_0 \leftarrow \emptyset$ 
2 foreach  $B \in G_0$  do
3    $s \leftarrow \text{BLOCKTOSUBGROUP}(B)$ 
4   if  $s \in S_0$  then
5     continue
6   else
7      $S_0 \leftarrow S_0 \cup \{s\}$ 
8   end
9 end
  //  $S_0$  stands for a set containing all subgroups
10 foreach  $s \in S_0$  do
11    $W(s) \leftarrow 0$ 
12 end
  // Initialize weights of each subgroup as 0
13 foreach  $B \in G_0$  do
14   foreach  $s \in S_0$  do
15     foreach  $v \in \text{SUBVIEWSBEGINWITH}(s)$  do
16       if  $B \in v$  then
17          $W(s) \leftarrow W(s) + \text{MININGPOWER}(B)$ 
18         break
19       end
20     end
21   end
22 end
  // Calculate weights of all subgroups
23  $s \leftarrow \text{BLOCKTOSUBGROUP}(B_0)$ 
24 if  $\text{CHILDSUBGROUPS}(s) = \emptyset$  then
25   return  $s$ 
26 else
27   Update  $s \leftarrow \arg \max_{s' \in \text{CHILDSUBGROUPS}(s)} W(s')$ 
28   Go to line 24
29 end
```

```

// Function to find all subviews that begin with s
1 Function SUBVIEWSBEGINWITH( $s$ ):
2    $V \leftarrow \emptyset$ 
3   if  $CHILDSUBROUPS(s) = \emptyset$  then
4     return  $\{\{s\}\}$ 
5   else
6     foreach  $c \in CHILDSUBROUPS(s)$  do
7       foreach  $v \in SUBVIEWSBEGINWITH(c)$  do
8          $V \leftarrow V \cup \{\{s\} \cup v\}$ 
9         //  $V.ADD(v.ADD(s))$ 
10      end
11    end
12 return  $V$ 
// Function to find child subgroups
13 Function CHILDSUBROUPS( $s$ ):
14    $C \leftarrow \emptyset$ 
15   foreach  $s' \in S_0$  do
16     foreach  $B' \in s'$  do
17       foreach  $B \in s$  do
18         if  $B'.predecessor$  has  $B$  then
19            $C \leftarrow C \cup \{s'\}$ 
20         end
21       end
22     end
23   end
24 return  $C$ 

```
