Data: M a n*n parentage matrix
Result: the root of the tree

```
1  nextRoot ← row with min sum of elements;
2  treeRoot ← null;
3  forall the rows row of M do
4  |  root ← nextRoot;
5  |  mark root as done;
6  |  if treeRoot == null then
7  |  |  treeRoot ← root
8  |  end
9  |  for i ← 0 to n do
10 |  |  row[i] ← 0;
11 |  |  if sum of elements of row == 0 then
12 |  |  |  add i as child of root;
13 |  |  end
14 |  |  if row has the smallest sum of elements and is not marked as
   |  |  done then
15 |  |  |  nextRoot ← i;
16 |  |  end
17 |  end
18 end
19 return treeRoot
```

Algorithm 1: Build tree from parentage matrix