
Algorithm 1: BRANCH AND PRICE

Data: data file, Ω , finished-boolean, duals-float

Result: $\Omega_1 \subset \Omega$, solution

```
1 begin;
2  $\Omega_1 \leftarrow InitialHeuristic(\Omega)$ 
3  $duals \leftarrow \emptyset$ 
4  $solution \leftarrow \emptyset$ 
5 repeat
6 until
7  $duals \leftarrow SolveMaster(\Omega_1)$ 
8  $finished \leftarrow true$ 
9 for  $i \in N$  do
10  $temp \leftarrow solveSubproblem(i, duals)$ 
11 if  $reduced\ Cost(temp) < 0$  then
12  $\Omega_1 = \Omega_1 \cup temp$ 
13  $finished \leftarrow false$ 
14  $finished$ 
15  $solution \leftarrow solveMaster(\Omega_1)$ 
16 if  $solution \notin Z$  then
17  $ub \leftarrow SolveMaster(\Omega_1, integral)$ 
18 if  $solution = ub$  then
19  $solution \leftarrow branchandbound(solution)$ 
20  $solution$ 
21
```
