

---

**Algorithm 1:** Assign Disassembly Line (Algo-ADL)

---

```
/* The algorithm must be repeated for each  $p$  individual. */
Data:  $nM, nA, nJ, nS, nORSuc, SUC, PRE, sol_p, sc, \theta, t, C$  ;
/* Algo-ADL inputs */
Result:  $X, U, tf$  ; /* Algo-ADL output */
begin
   $X_{m(i \in sc_m)js} \leftarrow [0]$  ; /* (0,1) assign of tasks to stations */
   $U_{js} \leftarrow [0]$  ; /* (0,1) opening stations */
   $tf_{m(i \in sc_m)} \leftarrow [0]$  ; /*  $\geq t_{m(i \in sc_m)}$  finishing time of tasks */
   $task\_pre, task\_theta \leftarrow \text{Algo-SPT}$  ; /* Set selected tasks'
    precedence and theta lists */
  /* Start of Algo-ADL || Repeat for each  $m$  model. */
  for  $m \leftarrow 1$  to  $nM$  do
     $j \leftarrow 0$  ; /* Initial value of station number is 0 */
     $assignable \leftarrow \emptyset$ ;
    for  $i \in sc_m$  if  $task\_pre_{mi} = \emptyset$  then Append  $i$  in  $assignable$ ;
     $assigned \leftarrow \emptyset$ ;
    while  $|selected_m| \neq |assigned|$  do
      if  $|assignable| = 1$  then
         $r \leftarrow 0$ ;
         $j, X, U, tf, assignable, assigned \leftarrow \text{Algo-AR}$ 
      else if  $|assignable| \geq 2$  then
         $r \leftarrow 0$  for  $l \leftarrow 1$  to  $|assignable|$  do
          if  $index(assignable_l, sol_{pm(nORSuc_m+2)}) <$ 
             $index(assignable_r, sol_{pm(nORSuc_m+2)})$  then
             $r \leftarrow l$ 
          end
        end
         $j, X, U, tf, assignable, assigned \leftarrow \text{Algo-AR}$ 
      for  $i \in sc_m$  do
        if  $i \notin assigned \cap i \notin assignable$  then
          for  $i' \in task\_pre_{mi}$  do
            if  $i' \notin assigned$  then
              Break
            else if  $i'$  is last element in  $task\_pre_{mi}$  then
              Append  $i$  in  $assignable$ 
            end
          end
        end
      end
    end
  end
  return  $X, U, tf$ 
end
```

---