

# List Scheduling Demo

As an instance **Example 5.1.2** from [Pinedo2001] book is shown.

This demo shows the list scheduling algorithm (listsch.m), while the LPT rule is used.

## Taskset declaration

```
% Processing times
T=taskset([7 7 6 6 5 5 4 4 4])
% Name of the tasks
T.Name={'t1' 't2' 't3' 't4' 't5' 't6' 't7' 't8' 't9'};
```

Set of 9 tasks

## List scheduling algorithm call

```
TS=listsch(T,problem('P|prec|Cmax'),4,'LPT')
```

Set of 9 tasks  
There is schedule: List Scheduling  
Solving time: 0.125s

## Cmax of the schedule

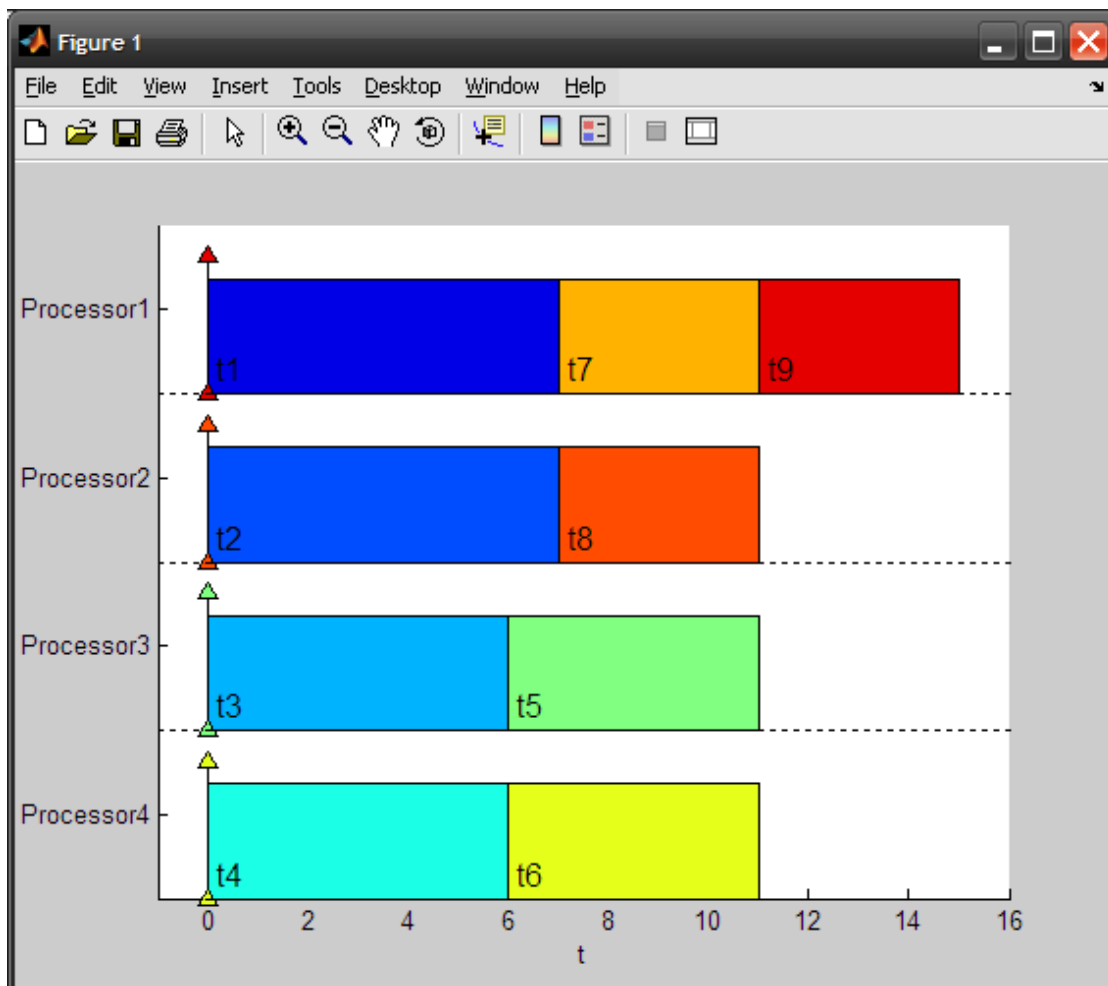
```
schparam(TS,'Cmax')
```

ans =  
  
15

## Draw the Gantt chart

Please note that there is a different order of tasks t5, t6 and t7, t8 in comparison with [Pinedo2001]. List scheduling algorithm implemented in TORSCHÉ doesn't change the order of task in the list with the same processing time in this case.

```
plot(TS)
```



# List Scheduling Demo (Optimal solution by ILP)

As an instance **Example 5.1.2** from [Pinedo2001] book is shown.

This demo shows an Integer Linear Programming based scheduling algorithm for P||Cmax problem.

## Taskset declaration

```
% Processing times
T=taskset([7 7 6 6 5 5 4 4 4])
% Name of the tasks
T.Name={'t1' 't2' 't3' 't4' 't5' 't6' 't7' 't8' 't9'};
```

Set of 9 tasks

## The scheduling algorithm call

```
TS=algpcmax(T,problem('P||Cmax'),4)
```

Set of 9 tasks

There is schedule: Parallel scheduling without preemption

## Cmax of the schedule

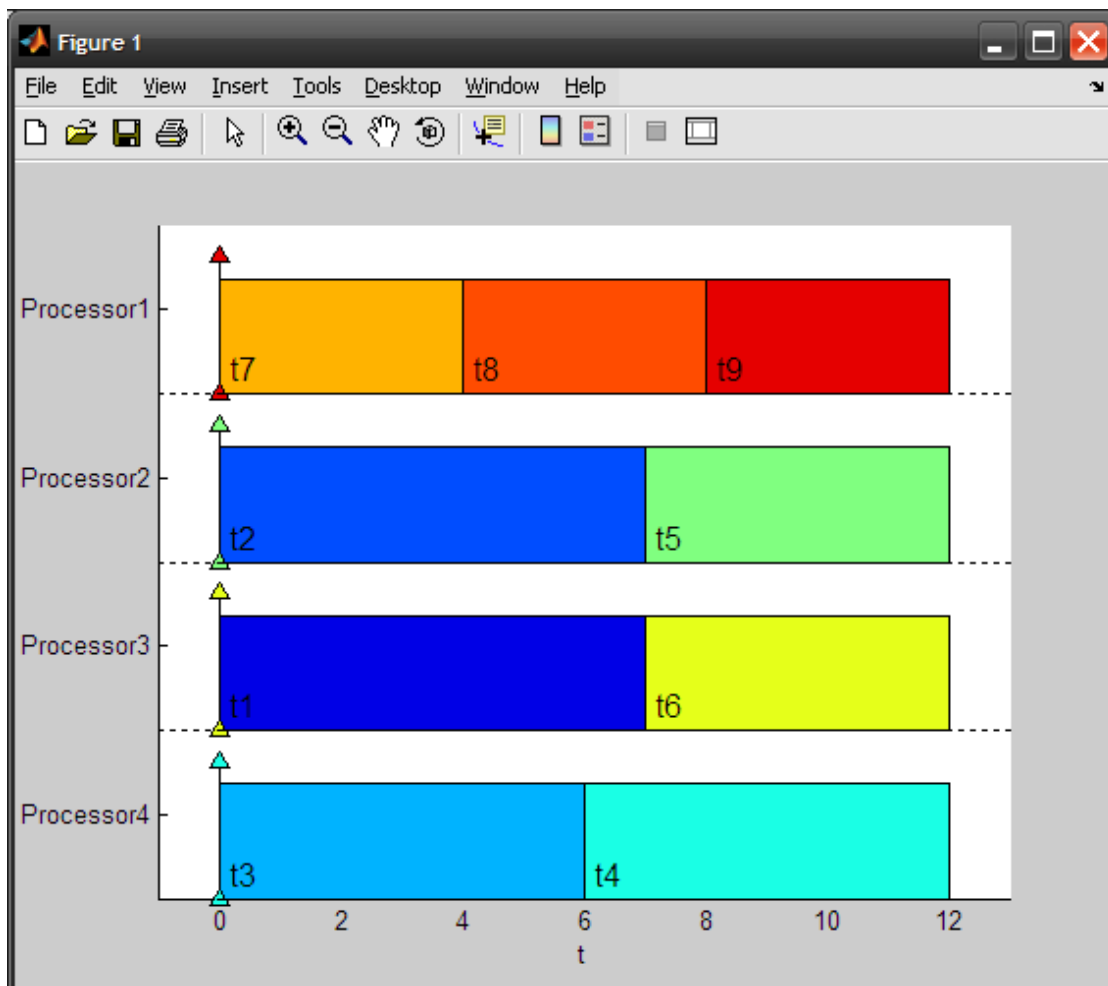
```
schparam(TS,'Cmax')
```

ans =

12

## Draw the Gantt chart

```
plot(TS)
```



# The Number of Tardy Tasks Minimization

As an instance **Example 3.3.3** from [Pinedo2001] book is shown.

This demo shows the Hogen's scheduling algorithm for number tardy tasks minimization.

## Taskset declaration

```
% Processing times
T=taskset([7 8 4 6 6])
% Due dates
T.DueDate=[9 17 18 19 21];
% Name of the tasks
T.Name={'t1' 't2' 't3' 't4' 't5'};
```

Set of 5 tasks

## Hodgson's algortihm function call

```
TS=alg1sumuj(T,problem('1||sumUj'))
```

Set of 5 tasks  
There is schedule: Hodgson's algorithm for 1||sumUj

## Sum Uj of the schedule

```
schparam(TS,'sumuj')
```

ans =

2

## Draw the Gantt chart

```
plot(TS)
```

