

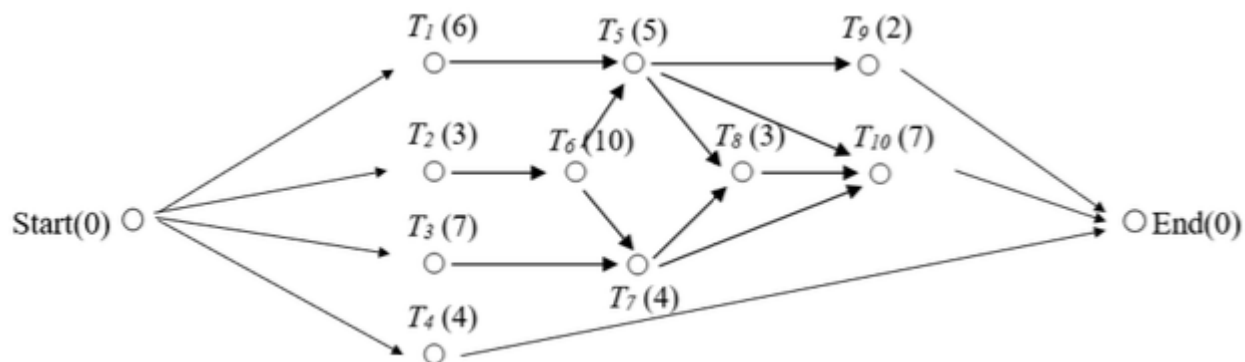
Math 140: Chapter 2 Scheduling Section 2.3 Decreasing Time Algorithm

Next, we will explore two algorithms for selecting a priority list.

Decreasing Time Algorithm

Create the priority list by listing the tasks in order from longest completion time to shortest completion time.

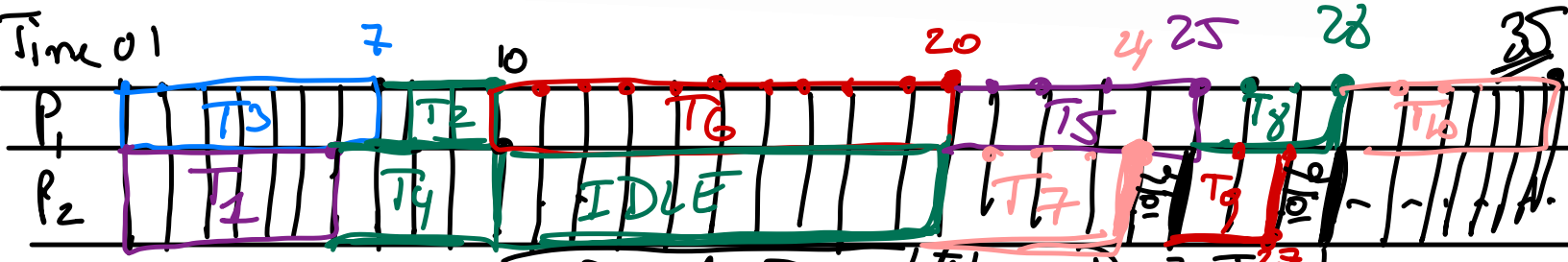
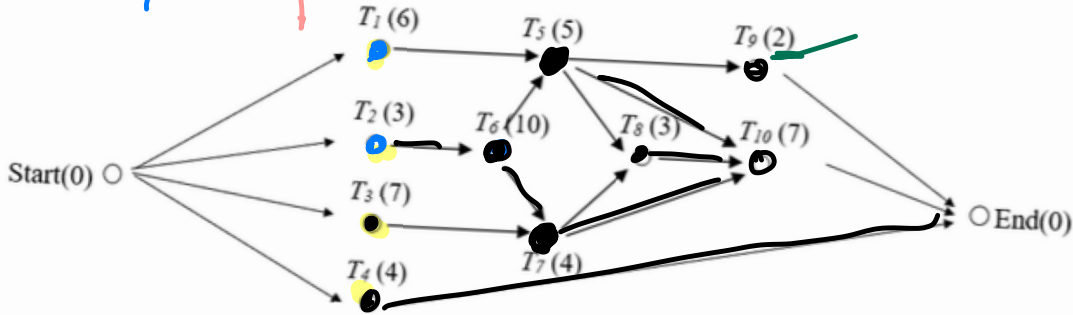
Example 1. Consider the scheduling problem represented by the digraph below. Create a priority list using the decreasing time list algorithm, then use it to schedule for two processors using the list processing algorithm.



Priority list obtained by using the decreasing time algorithm:

$T_6(10), T_3(7), T_{10}(7), T_1(6), T_5(5), T_4(4), T_7(4), T_2(3), T_8(3), T_9(2)$

Optimal Schedule.



Day 0: av: T_1, T_2, T_3, T_4
 assign: $P_1 \rightarrow T_3$
 $P_2 \rightarrow T_1$

Day 10: T_2 done
 • T_4 done
 • T_6 open
 • $P_1 \rightarrow T_6$
 $P_2 \rightarrow$ idle

Day 25: T_5 done
 $P_1 \rightarrow T_8$
 $P_2 \rightarrow T_9$

Day 6: T_1 completed
 • no new av.
 • $P_2 \rightarrow T_4$

Day 20: T_6 done
 • T_5 & T_7 av.
 • $P_1 \rightarrow T_5$
 • $P_2 \rightarrow T_7$

Day 27: T_9 done
 $P_2 \rightarrow$ idle

Day 7: T_3 done
 • none
 • $P_1 \rightarrow T_2$

Day 24: T_7 done
 • none
 • P_2 idle

Day 28: T_8
 • T_{10} av.
 • $P_1 \rightarrow T_{10}$

Finishing time of 35 days!