


Preemption Threshold aware Task-Scheduling Simulator

**Term Project
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Motivation / Objectives

- Needs in design time
 - To help simulation of trial schedules
 - To support preemption threshold scheduling
- 
- Implementation of timing simulator
 - RM, DM, EDF
 - Preemptive/Non Preemptive
 - Supporting Preemption Threshold Scheduling
 - For fixed priority scheduling
 - Computing appropriate PT values using MPTA algorithm
 - Preempt only when “priority > PT of current running task”
 - Graphical representation of simulated scheduling
 - By using third-party tool (gnuplot)

Task set & Parameters

```

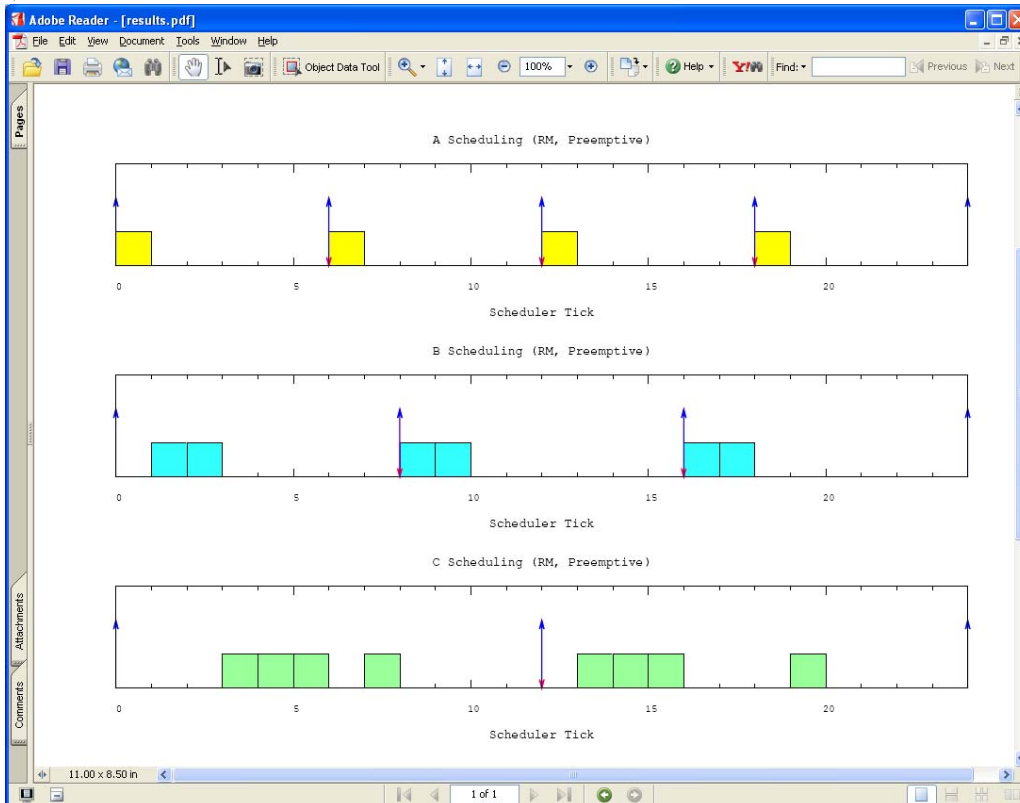
eos% cat in1.txt
Simulation Time= 99
StartDisplay= 0
EndDisplay= 99
Scheme= RM
Preemptive= Yes
PTS= No

TaskID  Name   Phase  Period  WCET   BCET   Deadline
0       A     0      6       1      1      6
1       B     0      8       2      2      7
2       C     0     12       4      4     11

eos%
    
```



Graphical Representation



Simulation Statistics

```

1       B     0      8       2      2      7
2       C     0     12       4      4     11

eos% ./sched in1.txt
** Task Scheduling Simulator **
- Simulated # of scheduler tics: 24
- Simulated scheduling scheme: RM, Preemptive
+ Given task set: in1.txt
TaskID  Phase  Period  WCET   BCET   Deadline  Task Name
0       0      6       1      1      6      A
1       0      8       2      2      7      B
2       0     12       4      4     11     C
+ Simulation statistics
TaskID  #jobs  #jobs done  #missed DL  Priority
0       5      5           0           1
1       4      4           0           2
2       3      3           0           3
+ Simulated WCRT
- Task 0 - 1
- Task 1 - 3
- Task 2 - 8
eos%
    
```