

# Simulation assignment

T1(3, 0.5), T2(4, 1.5, 3), T3(7, 1.0, 5) and the EDF scheduler.

A sporadic job arrives at t=50 having the execution time of 10 and a relative deadline of 30.

SimSo: Real-Time Scheduling Simulator - (Model data)

File View Help

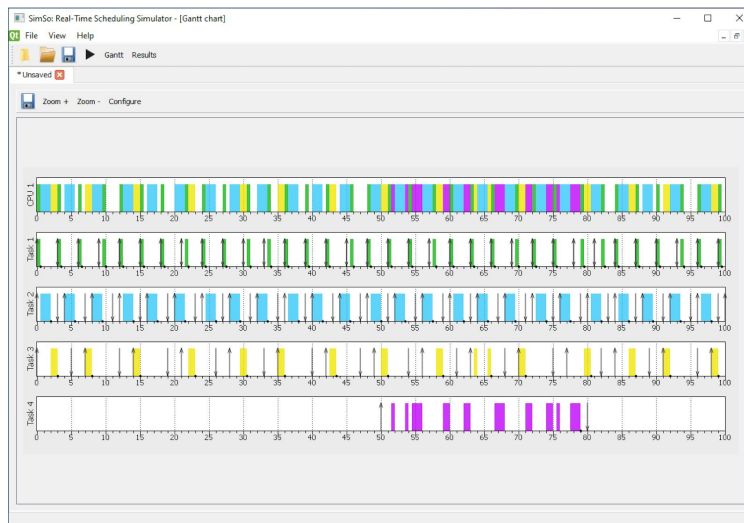
\*Unsaved

General Scheduler Processors Tasks

id	Name	Task type	Abort on miss	Act. Date (ms)	Period (ms)	List of Act. dates (ms)	Deadline (ms)	WCET (ms)	Followed by
1	Task 1	Periodic	<input checked="" type="checkbox"/> Yes	0	3	-	3	0.5	
2	Task 2	Periodic	<input checked="" type="checkbox"/> Yes	0	4	-	3	1.5	
3	Task 3	Periodic	<input checked="" type="checkbox"/> Yes	0	7	-	5	1.0	
4	Task 4	Sporadic	<input checked="" type="checkbox"/> Yes	-	-	50.0	30	10	

Edit data fields...

Remove selected task(s) Add task Generate Task Set



> What is the minimum/maximum/average response time of all tasks?

Response time:				
Task	min	avg	max	std dev
TASK T1	0.500	0.676	1.500	0.294
TASK T2	1.500	1.700	2.000	0.245
TASK T3	1.000	1.967	3.500	0.921
TASK T4	29.000	29.000	29.000	0.000

> Is any task missing the deadline? Which task? Where?  
No

> Is the sporadic job meeting its deadline?  
No

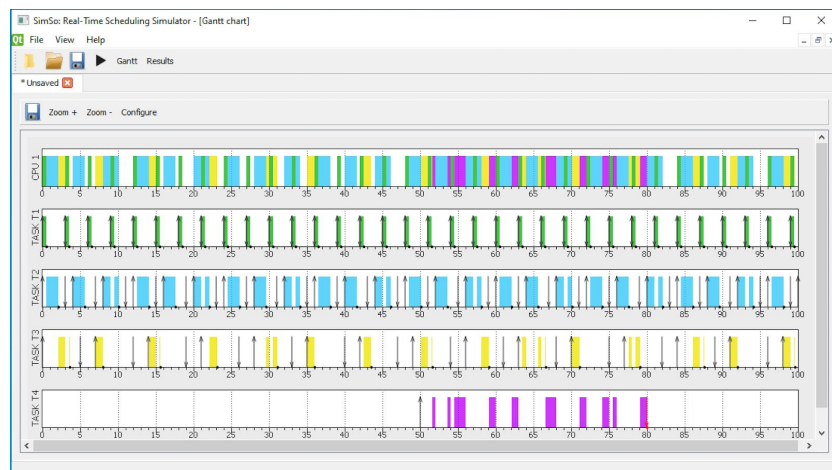
General	Logs	Tasks	Scheduler	Processors				
General	Task 1	Task 2	Task 3	Task 4				
Activation	Start	End	Deadline	Comp. time	Resp. time	CPI	Preemptions	Migrations
50.0000	50.0000	79.0000	80.0000	10.0000	29.0000		10	0

> What is the response time for the sporadic job?  
29.0

T1(3, 0.5), T2(4, 1.5, 3), T3(7, 1.0, 5) and the RM scheduler.

A sporadic job arrives at t=50 having the execution time of 10 and a relative deadline of 30.

id	Name	Task type	Abort on miss	Act. Date (ms)	Period (ms)	List of Act. dates (ms)	Deadline (ms)	WCET (ms)	Followed by
1	TASK T1	Periodic	<input checked="" type="checkbox"/> Yes	0	3	-	3	0.5	
2	TASK T2	Periodic	<input checked="" type="checkbox"/> Yes	0	4	-	3	1.6	
3	TASK T3	Periodic	<input checked="" type="checkbox"/> Yes	0	7	-	5	1.0	
4	TASK T4	Sporadic	<input checked="" type="checkbox"/> Yes	-	-	50.0	30	10	



> What is the minimum/maximum/average response time of all tasks?

Response time:				
Task	min	avg	max	std dev
TASK T1	0.500	0.500	0.500	0.000
TASK T2	1.600	1.940	2.100	0.233
TASK T3	1.000	2.173	3.600	0.980
TASK T4				

> Is any task missing the deadline? Which task? Where?

No

>Is the sporadic job meeting its deadline?

Yes. The deadline is missed.

General	Logs	Tasks	Scheduler	Processors				
General	TASK T1	TASK T2	TASK T3	TASK T4				
Activation	Start	End	Deadline	Comp. time	Resp. time	CPI	Preemptions	Migrations
50.0000	50.0000	80.0000	80.0000	8.7000	30.0000		9	0

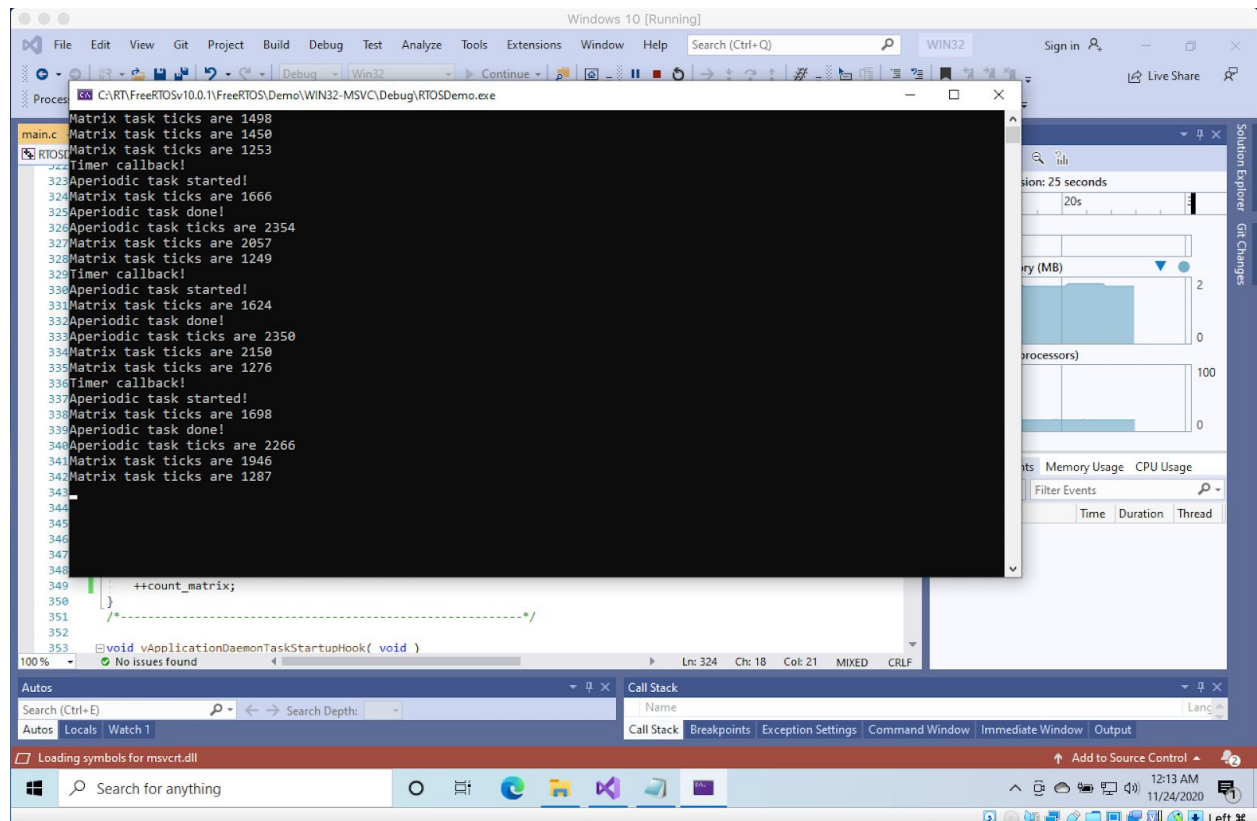
>What is the response time for the sporadic job?

30.0

>Which scheduler is better in this example; EDF or RM?

EDF

# Programming assignment



> Is the system fast enough to handle all aperiodic tasks? Why?

The "matrixtask" consumes most of the CPU time and the "aperiodic\_task" priority is 2 that is lower than the "matrixtask" has that is 3.

> If not, solve this problem without alter the functionality of any task

To increase the "aperiodic\_task" priority to 3 that is equal to the "matrixtask" priority.

> What is the response time of the aperiodic task?

the response time of the aperiodic task is about 2.3 seconds.