

Simulation assignment

1. 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

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

Task	min	avg	max
TASK T1	0.500	0.676	1.500
TASK T2	1.500	1.700	2.000
TASK T3	1.000	1.967	3.500
TASK T4	29.000	29.000	29.000 (sporadic job)

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

No task is missing deadline

- Is the sporadic job meeting its deadline?

Yes

- What is the response time for the sporadic job?

29s

2. 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

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

Task	min	avg	max
TASK T1	0.500	0.500	0.500
TASK T2	1.500	1.840	2.000
TASK T3	1.000	1.900	3.000
TASK T4	-	-	- (sporadic job)

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

Sporadic job is missing deadline at 80s

- Is the sporadic job meeting its deadline?

No

- What is the response time for the sporadic job?

30s(due to deadline miss)

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

EDF is better in this example

Programming assignment

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

No, the system is not fast enough to handle all aperiodic tasks. Since “matrixtask”(periodic task) consumes most of the cpu resources and has hard deadline, aperiodic task doesn’t complete.

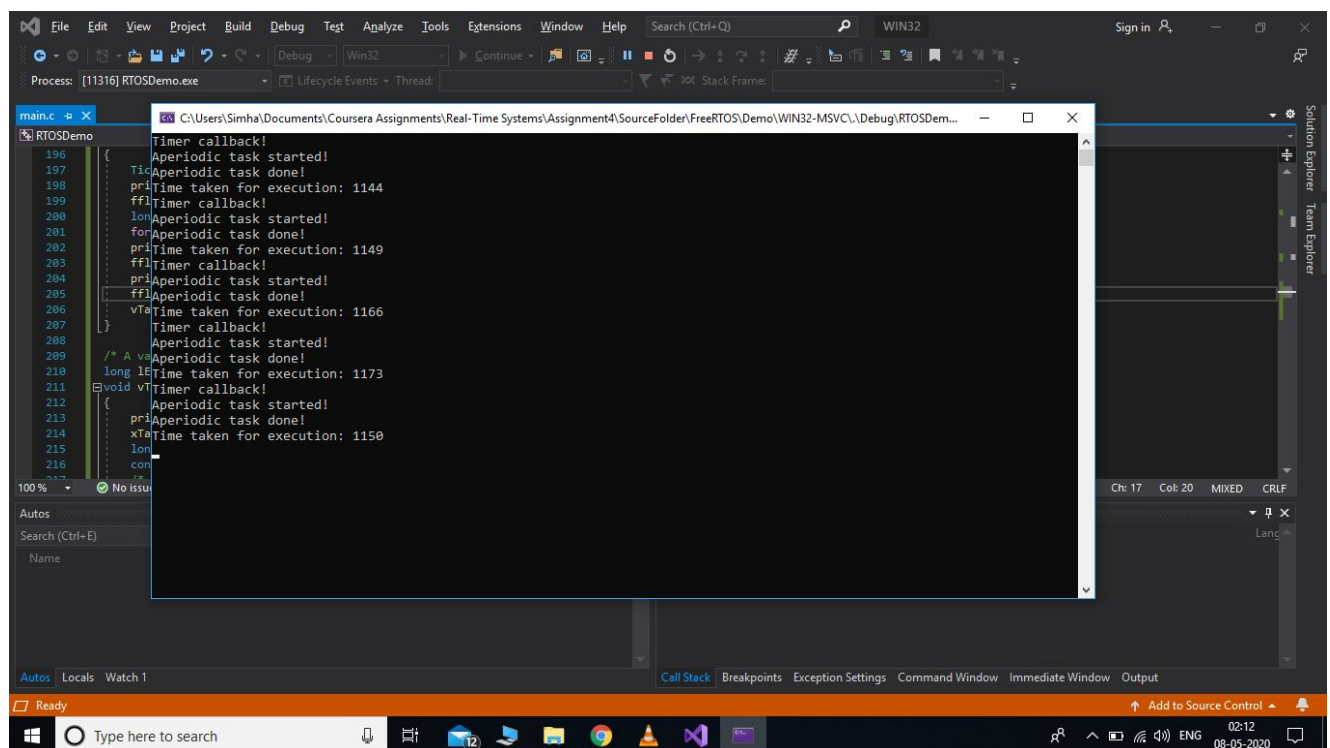
- **If not, solve this problem without alter the functionality of any task**

This can be solved by elevating the priority of aperiodic job or by increasing the period between release of new aperiodic jobs(currently the period is 5s)

- **What is the response time of the aperiodic task?**

Response time is around 1150 ms or 1.15 s (measured using getTick())

- **Provide a screenshot of the running system**



```
main.c [11316] RTOSDemo.exe
196 {
197     Timer callback!
198     Aperiodic task started!
199     pr1Time taken for execution: 1144
200     fflTimer callback!
201     lonAperiodic task started!
202     forAperiodic task done!
203     pr1Time taken for execution: 1149
204     fflTimer callback!
205     pr1Aperiodic task started!
206     fflAperiodic task done!
207     v1Time taken for execution: 1166
208     Timer callback!
209     Aperiodic task started!
210     /* A va
211     long lTime taken for execution: 1173
212     void v1Timer callback!
213     Aperiodic task started!
214     pr1Aperiodic task done!
215     x1Time taken for execution: 1150
216     lon
217     con
218     /s
219 }
```