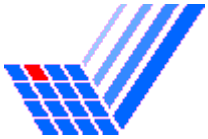
10th of July 2007



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9. Embedded Systems Lab Exercises

Real Time Scheduling Example (10 Points)

A task scenario is given which consists of the four tasks T1, T2, T3 and T4. The tasks will be executed on a one processor system and have the following priorities prio(T1)=4 (lowest), prio(T2)=3, prio(T3)=2, prio(T4)=1 (highest). Table 1 shows the values for the arrival time *a* and the execution time *c* for each task. It shows also the resource accesses of the tasks.

Tasks	Arrival Time	Execution Time	Printer		COM1	
			Δt P	Δt V	Δt P	Δt V
T1	0	20	1	14	4	5
T2	2	10	-	-	1	6
T3	4	5	-	-	-	-
T4	4	5	1	3	-	-

Tasks:

- Download from „ls12-www.cs.uni-dortmund.de/edu/scripts-en.html“ the file „*leviRTS.zip“*. For installing the training module you have to unpack the zip file.
- Start the training module by executing the file „*leviRTS.jar“.*
- Open a new task scenario and choose *“Resource Access Protocol (priority based, preemptive)”* from the algorithm selection list. Now insert the task scenario described above into the training module.
- Start the visualization of your task scenario. Which problem occurs during the scheduling? What can be done to avoid it?
- Please fill in the questionnaire of the training module leviRTS.