1 2017-04-12

Moodle Password: go!70Inf

2 Scheduling Methods - Overview

- **Earliest Due Deadline**
  - the task with the nearest deadline always comes next
  - it is **not** interrupted if another task with an even closer deadline is scheduled (non-preemptive)
- **Rate Monotonic Scheduling**
  - the task with the shortest period has the highest priority
  - if another task with an even shorter period is scheduled, the current task is interrupted and the shorter task runs (preemptive)
- **Earliest Deadline First**
  - the task with the nearest deadline always comes first
  - if another task with an even closer deadline is scheduled, the current task is interrupted and the one with the closer deadline runs (preemtive)

3 2017-07-04 Klausurrelevant u.a.

- Reachability Graph
- Petri Nets

4 2017-07-12

- Abgesehen von Phase ist nichts aus Reference Model II Klausur-relevant

4.1 Example exam question

- What are the two requirements for real time systems? (Introduction Part 3, Slide 5)
- What are three types of RTS? Give an example for each (Introduction Part 3, Slide 6)
- How does a timer work?
- What is a minor page fault?
- Give examples of real time systems
- Apply the reference model I
- Make a schedule
  - EDD
  - EDF
  - RMS
  - RMS + Ressource
- Perform a schedulability test
  - necessary condition
  - sufficient condition

- What is the difference between a process and a threat? (memory, thread control block, process control block, etc)
- What are the issues with concurrency? (deadlock, livelock, race conditions)
- What is a race condition? How can you avoid them? (mutex, semaphores)
- What are the three ways to do priority inversion for RMS+Ressource
- How do you use a micro controller?
- What are typical components of a micro controller?
- How does a sensor work?
- What is an embedded system?
- What types of embedded systems are there? (small ones and big ones)
- What are the requirements for an embedded systems (e.g. power consumption, heat resistance, certain IO, etc)
- Draw a petri net
- What is liveness? What is safeness?
- Draw a reachability graph
- What is Δt_{per} and rate? What is the connection between them?