Operating Systems Semester 1, 2007 Eike Ritter



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Exercise sheet 1

- 1. Which of the following hardware instructions should be allowed only in supervisor mode? Justify your answer.
 - Set value of timer
 - Read the clock
 - Clear memory
 - Turn off interrupts
 - Switch from user to supervisor mode
- 2. An alternative to processing of I/O via interrupts is the so-called *busy* waiting, where the process executes a loop until the I/O-operation is finished. Why do interrupts yield a better performance?
- 3. Describe the effects on response time and scheduling policy if a process is never forced to release the processor, i.e. it gives up the processor only for interrupts and when it decides to do so.
- 4. Assume a computer has more than one processor. Is it possible for kernel code to achieve mutual exclusion by disabling interrupts? Justify your answer.