

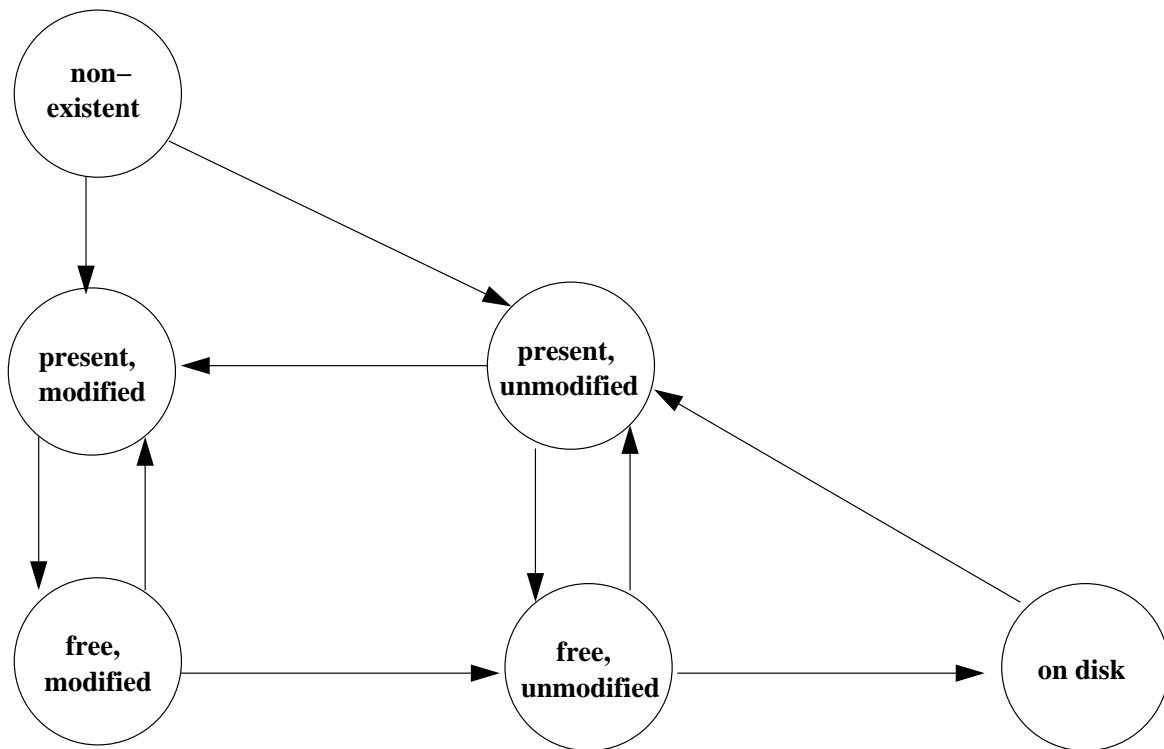
OHJ-4106 Operating Systems

Exam 22.3.2007

Calculators, computers or literature are NOT allowed in this exam.

1. Describe shortly (as to someone not familiar with this particular software systems subject) what these concepts are: (2 p/item):
 - a) What are the main functions of an operating system?
 - b) Logical address space and Physical address space.
 - c) Paging virtual memory.
 - d) Process swapping.
 - e) Process scheduling.
 - f) *seek*-operation in file handling.
 - g) *mount*-operation in UFS (Unix File System).
 - h) Global and Local replacement algorithms.
2. Interrupts.
 - a) Operating System can be seen as an interrupt driven system – what does this mean? (2 p)
 - b) What support from the hardware is needed for interrupt handling in operating systems? (2 p)
 - c) Explain the following interrupt types (what they are used for, how they are typically handled) (4 p)
 - i. I/O-interrupt
 - ii. (error) trap
 - iii. system call
 - iv. page fault

continues ...



Kuva 1: States for a memory page

3. A memory page belonging to a process can exist in several states in the system. Figure ?? shows one possible set of these states. What do these states mean (in what use the memory page is in the state)? In what situations a state transition is made? In which states the page is accessible by the process? (8 p)