

Final Quiz Operating Systems II

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Numericals

Consider a process size of 45327 bytes and a page size of 2KB (1KB=1024 Bytes). What is the total number of bytes lost due to internal fragmentation? Give a brief description of your calculations. 3 points

Your answer

Consider that the virtual address consists of 27-bits and OS uses paging for memory management. Consider that the page size is 2 KB. Find the maximum number of pages that can be present in the system. Give a brief description of your calculations. 3 points

Your answer

Consider that the virtual address consists of 27-bits and OS uses paging for memory management. Consider that the page size is 2 KB. Assume that the physical memory is 1 MB (20-bit address space). Find the number of bits per entry in the page table for Virtual to physical page translation (ignore the control bits, just consider the mapping bits). Give a brief description of your calculations. 4 points

Your answer



Consider memory access time of 100 ns and TLB hit rate of 0.90 (90%). 2 points
Find the effective access time when 1-level page table is used. Give a brief description of your calculations.

Your answer

Consider memory access time of 100ns and TLB hit rate of 0.90 (90%). 2 points
Find the effective access time when 2-level page table is used. Give a brief description of your calculations.

Your answer

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