Quiz: Virtual Memory Implementation

Total points 60/60

Take the quiz solo, but feel free to consult a partner student, the book, the videos or other resources if needed. Re-take quiz if your score is less than 80% or if you just want some more practice.

The respondent's email (faiyaz@pdx.edu) was recorded on submission of this form.

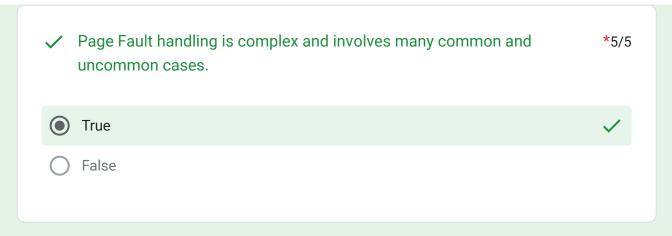
- ✓ How does the OS allow read-only memory pages to be shared across. *5/5 processes? it swaps the shared pages to a shared swap device it uses multiple CPU cores to achieve parallel processing it uses a paging daemon to share the pages it configures the appropriate page table entries in multiple processes to refer to , a single page frame in physical memory. it duplicates the memory pages in physical memory
 - COW page sharing means *

5/5

- a memory page is written to disk during each copy operation
- a dairy cow is shared among multiple farmers until it can be cloned
- a page is shared until it is written by one of the sharing processes. When one of the sharing processes attempts to write to the page the OS makes a copy of the page before allowing the process to write to the new copy..
- shared memory pages are either Copied Or Working, i.e., COW

✓	Page Sharing can be used as a fast form of inter-process communication.	*5/5
•	True	✓
0	False	
✓	Code to handle page faults tends to be machine independent, allowing oper\ating systems to implement generic handling algorithms.	*5/5
•	True	✓
0	False	
✓	All processes running on a computer share the same page table. *	5/5
0	True	
•	False	✓
~	COW page sharing is useful with the fork() system call because the child process's copy of the parent's data is usually short lived.	*5/5
	True	✓

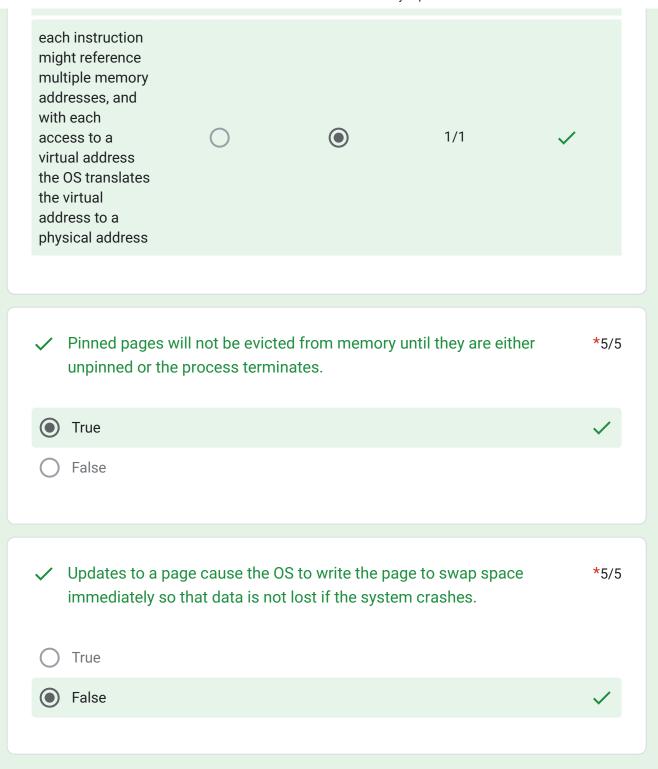
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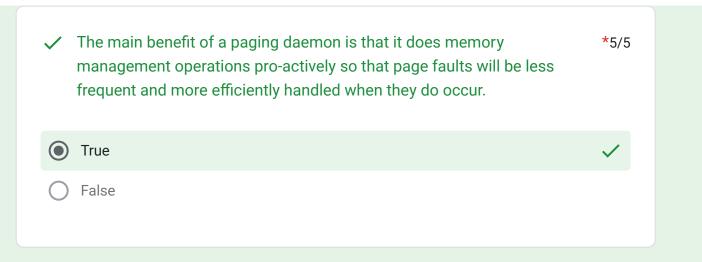


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	Yes, OS does memory management operations at this time	No, OS does not do memory management operations at this time	Score	
at process creation time the OS creates a page table for the process and pages in some of the process's pages		0	1/1	✓
whenever the OS schedules a process to run it configures the MMU to use the correct page table and flushes the TLB		0	1/1	✓
when a memory fault occurs the OS is interrupted, handles the fault/interrupt and might performa a variety of memory management operations depending on the situation			1/1	
when a process completes, the OS deallocates the process's resources including physical memory			1/1	~





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Why might an OS pin a page in memory? *								
	Yes, good reason for pinning of a page	No, not a reason for pinning a page.	Score					
the page is not yet pinned and therefore needs to be pinned	0		1/1	✓				
as a way to signal friends within the OS's social network	0		1/1	✓				
if the page is extremely important, for example it holds a vital data structure.		0	1/1	✓				
the pin indicates that the OS likes this page more than other pages	0		1/1	✓				
if the page is involved in an I/O transfer then we want to keep the page in memory until data has been transferred to/from the I/O device		0	1/1	✓				

This form was created inside of Portland State University.

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