EE463
Operating System Lab.
King Abdulaziz University
Faculty of Engineering - ECE

Lab. #8

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Solution

Simulator: pagetrans.py
Command: python ./pagetrans.py -a 8k -p 512 -r 64k -s 109
Solution:
Virtual Address Trace

VA 0x00000e42 (decimal: 3650) →	Real address: 0x00000c80 VPN: 3650 >> 9 = 7
VA 0x00000d8f (decimal: 3471) →	Invalid address VPN: 3471 >> 9 = 6
VA 0x000004e8 (decimal: 1256) →	Real address: 0x00000600 VPN: 1256 >> 9 = 2
VA 0x0000014e (decimal: 334) →	Invalid address VPN: 334 >> 9 = 0
VA 0x00001ef8 (decimal: 7928) →	Real address: 0x00002aa0 VPN: 7928 >> 9 = 15

Simulator: pagetablesize.py
Command: python ./pagetablesize.py -v 32 -e 4 -p 4k
Solution:
Virtual Address (VA) = [Virtual Page Number (VPN) | Offset (D)]

VA (bits)	VPN (bits)	D (bits)	pte (byte)
32	20	12	4

Calculate (Linear Page Table Size) and write the results in the simplest readable form (e.g. byte, KB, MB, GB, and TB)

Linear Page Table Size =
2^20 = 1048576 entries * 4 bytes
= 4194304 bytes / 1024
= 4096 KB / (1024 * 1024)
= 4 MB