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 16k -p 2k -r 128k -s 107
Solution:
Virtual Address Trace

VA 0x00003a08 (decimal: 14856) →	**RA 0x00016a08 [VPN= 7]**
VA 0x000011f1 (decimal: 4593) →	**RA 0x0000f1f1 [VPN= 2]**
VA 0x0000140f (decimal: 5135) →	**RA 0x0000f40f [VPN= 2]**
VA 0x00000bfc (decimal: 3068) →	**RA 0x0001f3fc [VPN= 1]**
VA 0x000025be (decimal: 9662) →	**Invalid [VPN= 4]**

Simulator: pagetablesize.py
Command: python ./pagetablesize.py -v 32 -e 8 -p 2K
 Solution:
Virtual Address (VA) = [vvvvvvvvvvvvvvvvvvvvv | 00000000000]

VA (bits)	VPN (bits)	D (bits)	pte (byte)
32	**21**	**11**	**2048**

Calculate (Linear Page Table Size) and write the results in the simplest readable form (e.g. byte, KB, MB, GB, and TB)
Solution Steps:
- $2^{(VPN\ bits)} = 2^{21} = 2{,}097{,}152$
- Size of every page = 8
- $8 * 2{,}097{,}152 = $ **16,777,216 B**

Linear Page Table Size =
KB => $\frac{16{,}777{,}216}{1024} = $ **16384 KB**
MB => $\frac{16384}{1024} = $ **16 MB**