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 4k -p 512 -r 64k -s 101`
Solution:
Virtual Address Trace

VA 0x00000317 (decimal: 791) →	**RA 0x0000ed17 [VPN= 1]**
VA 0x0000016b (decimal: 363) →	**RA 0x0000316b [VPN= 0]**
VA 0x00000c51 (decimal: 3153) →	**RA 0x00003651 [VPN= 6]**
VA 0x000005dd (decimal: 1501) →	**Invalid [VPN= 2]**
VA 0x0000078c (decimal: 1932) →	**RA 0x0000378c [VPN= 3]**

Simulator: pagetablesize.py
Command: `python ./pagetablesize.py -v 32 -e 8 -p 16k`
Solution:
Virtual Address (VA) = [Virtual Page Number (VPN) | Offset (D)]

VA (bits)	VPN (bits)	D (bits)	pte (byte)
32	**18**	**14**	**16384**

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

- $2^{(\text{VPN bits})} = 2^{18} = 262144$
- Size of every page = 8
- 8 * 262144= **2097152 Bytes**

Linear Page Table Size (bytes) = 2097152 Bytes
Linear Page Table Size (KB) = 2048 KB
Linear Page Table Size (MB) = 2 MB