EE463 Lab. #8

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

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Solution

Simulator: pagetrans.py

Command: python ./pagetrans.py -a 16k -p 512 -r 128k -s 104

Solution:

Virtual Address Trace

| VA 0x000009db (decimal: 2523) → | invalid [VPN= 4] | |
|----------------------------------|------------------------|--|
| VA 0x000000a0 (decimal: 160) → | RA 0x0001bea0 [VPN=0] | |
| VA 0x00003411 (decimal: 13329) → | Invalid [VPN= 26] | |
| VA 0x00000f98 (decimal: 3992) → | RA 0x0000a998 [VPN= 7] | |
| VA 0x000004a0 (decimal: 1184) → | Invalid [VPN= 2] | |

Simulator: pagetablesize.py

Command: python ./pagetablesize.py -v 38 -e 2 -p 2K

Solution:

Virtual Address (VA) = [Virtual Page Number (VPN) | Offset (D)]

| VA (bits) | VPN (bits) | D (bits) | pte (byte) |
|-----------|------------|----------|------------|
| 38 | 27 | 11 | 2 |

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 =256 MB