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| EE463  Operating System Lab.  King Abdulaziz University  Faculty of Engineering - ECE |  | **Lab. #8**  **\_\_ / 10** |

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| **Name: Ahmed Alkhayal** | **Id: 1945541** |

**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(VPN bits) = 218 = 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**