

CS 537: Intro to Operating Systems (Summer 2017)

Worksheet 5 - Page Replacement Policies

July 13th, 2017 (Thursday)

Consider the following virtual memory references, given by the virtual page number:

3 2 1 0 3 2 4 3 2 1 0 4

For each scenario given below, determine whether the virtual page access will lead to a **HIT ("H")** as the page is found in the memory of the system or a **MISS ("M")** as it is not (the page must be retrieved from the disk's swap space). Also, compute the **hit rate** in each scenario. You should include the compulsory misses too while computing the hit rate.

All pages begin on the disk; no pages are in the memory at the start of each scenario (and thus must be referenced to be brought into memory).

1. Policy: OPT, Cache Size: 3

3 2 1 0 3 2 4 3 2 1 0 4

Hit Rate:

2. Policy: FIFO, Cache Size: 3

3 2 1 0 3 2 4 3 2 1 0 4

Hit Rate:

3. Policy: LRU, Cache Size: 3

3 2 1 0 3 2 4 3 2 1 0 4

Hit Rate:

(continued on page 2)

4. Policy: OPT, Cache Size: 4

3 2 1 0 3 2 4 3 2 1 0 4

Hit Rate:

5. Policy: FIFO, Cache Size: 4

3 2 1 0 3 2 4 3 2 1 0 4

Hit Rate:

6. Policy: LRU, Cache Size: 4

3 2 1 0 3 2 4 3 2 1 0 4

Hit Rate: