LEARNING ISSUE GUIDE: VIRTUAL MEMORY MANAGEMENT

Suggested Scope:

1. Reason for Use of Virtual Memory / What is Virtual Memory?

2. Demand Paging

   - Explain what demand paging is and how is it being implemented.
   - How is the performance of demand paging being measured?

3. Page Fault

   - What is page fault?
   - Give detailed explanation of the things that will take place when page fault occurs

4. Page Replacement

   - Define page replacement
   - Explain the need for page replacement and how it works

5. Page Replacement Algorithms

   - FIFO / LRU / Optimal
   (Briefly explain each algorithm and give examples to show how it works)

   - Explain what Belady's Anomaly is and show an example of its occurrence

Suggested Practice Questions:

Refer to Review Exercise 7

Additional Practice Questions:
(You can use this as an example in your peer teaching notes)

Consider the following page-reference string:

1, 0, 2, 4, 0, 5, 3, 1, 3, 2, 5, 0, 4, 0, 2, 3, 1, 2, 0, 4

With the aid of a clearly labeled diagram, show how many page faults would occur for the following page replacement algorithms, assuming **FOUR** page frames.

Remember that all frames are initially empty, so your first unique pages will all cost one fault each.

a. LRU replacement

b. FIFO replacement

c. Optimal replacement