Virtual Memory: More Policies
Activity Instructions

(format borrowed from TIDES and FIC workshops:)

It's time to think about the virtual memory system as part of the whole system. Let's assume that you are in an interactive demand-paged system with many processes. You are going to make some choices about this system and then answer some questions.

1. Choose: How many frames are present in physical memory? *Be certain to choose a power of 2!*

2. Choose: What is the page size in your system? *Again, with the power of two.*

3. Answer: Given those choices, how many bits are needed in the physical address of your system?

4. Choose: How many pages are available to each process in your system? *Don't forget to choose a power of 2!*

5. Answer: Given your choices so far, how many bits are in the virtual address of your system?

6. Choose: How many processes are currently executing in your system? Go with at least 4.

7. Choose: Assuming that there is only one free frame in the system, which processes have what pages in physical memory? *Assign pages of each process to the frames until there is only one free frame. For example, Process A has page 0 in frame 2, etc.*

8. Answer: Another process starts, what will happen when it tries to access its code for the first time?

9. Choose: Assume this new process has accessed its code and now physical memory is full. It then tries to access its static data segment, and so a page replacement algorithm must execute. Will your system use clock or enhanced clock replacement?

10. Choose: What is the current status of each of the resident page's accessed and dirty bits?

11. Answer: What page is evicted to make room for the new page?

12. Answer: After evicting the page, its owning process tries to access it immediately. Where will the system find its contents?