**Lab 10 - CIS 452**

1. **What is the total amount of Physical Memory (KB) available on your system (In use + Available)?**

~5,900,000 Kilobytes of physical memory

1. **Based on changes to the amount of Available memory, what is the apparent footprint (i.e., the full memory demand) of MS Edge with several web pages open?**

Memory usage has gone up 600mb after creating 6 new pages in Edge

1. **One of the measured components of available memory on Windows is the Standby list. What memory management mechanism described in your textbook does the Windows Standby list implement?**

The Windows Standby list uses page-buffering to manage memory

1. **Note the changes in the reported amount of available memory as graphed in the display. Why is the apparent memory footprint of two instances of MS Edge not exactly twice the memory usage of a single instance?**

When we started one edge instance, the memory availability dropped from ~1300mb to 600mb. When we started the second instance, memory dropped about 100mb lower to ~500mb of available memory. After a short amount of time, memory availability started going up more until the system sat at around ~950mb of available memory. We think that the memory required for the second instance wasn’t as large as the first because most of the memory being taken up was the overhead for running an instance of edge. The amount of memory taken up by creating another instance was very similar to the amount of memory taken up when creating a new tab. This leads us to think that creating a new instance of edge is similar if not the same as creating a new tab.

1. **What are the amounts of Total Physical Memory and Total Virtual Memory available on your system? Explain the relationship between these two numbers and why Total Virtual Memory is bigger.**

5.94GB of physical memory and 11.7GB of virtual memory. Virtual memory is larger because instead of only using physical memory, memory management algorithms use portions of the hard drive to temporarily store data that isn’t being used all the time in physical memory.

1. **Under Virtual Memory, observe the size of the paging file. How does this number correspond with the values observed in question 5? What is the purpose of the paging file in Windows (i.e. what Linux object has similar functionality)?**

The page file is 5888mb. This is a little bit less than the amount of physical memory on the system. The paging file is used by Windows as virtual memory. Linux has the swap space which functions similarly to the paging file.

1. **How much virtual memory is File Explorer (explorer.exe) using?**

~170,000kb of virtual memory.

1. **Based on your understanding of the concepts discussed in class, what exactly is happening to produce the changes observed in the Performance graph? Quantify your answer.**

Notepad is requesting more memory when we try to change the font of text that we’ve typed. This is expressed through the number of page faults per second, where each page fault is notepad attempting to access memory that it doesn’t have. After attempting to access this memory, the system allocates more memory to the process so it can continue.