**Operating Systems**

**Homework 1**

In this homework, start with the last in-class assignment and change the function replace\_at, which was used to write num characters at the offset into the destination file. For the in-class work, the function writes the bytes no matter the original file size. If the file has bytes in it, they get overwritten.

Instead of the replace\_at function, you should write the function:

insert\_at( int fd, off\_t offset, char \*buf, int n )

This function should ***insert*** the n chars from the buf at the offset in the file. If bytes are already there, the new bytes should be inserted in between them. If there are no bytes already there, then the new bytes just should be written. The destination file’s size should be num bytes larger after the program runs sucessfully.

The program must meet all the specifications of the in-class exercise, except for the function explained above. It should give error messages about any problems with the arguments or the files or the I/O.

The insert\_at function is independent work – it must be done alone. It should contain all its own error handling.