**CST – 221 File I/O**

Activity Directions:

In this assignment you will do research on I/O Devices and the handling of Hardware Interrupts within the Linux operating system. The following are the tasks you need to complete for this assignment:

1. Research the four I/O Software Layers found in a typical operating system. For each Layer provide a description of the layer, the purpose of the layer, and a concrete example of how this layer is supported in the Linux operating system. Your research must be between 300-500 words. Provide a turnitin report for this part of the assignment. The assignment will not be accepted if the turnitin report is not submitted.
2. Draw a flow chart for the series of steps that are generally required to handle and process a hardware interrupt. When drawing your flow chart make sure you use the proper flow chart symbols (Circle for begin and end process, Rectangle for a task, Diamond for a decision, etc.). Write up (100-200 words) a summary of your research that outlines in your own words how this process functions. Provide a turnitin report for this part of the assignment. The assignment will not be accepted if the turnitin report is not submitted.
3. Research how the keyboard and mouse input I/O Devices function. For each device write a theory of operation detailing how each input device works with its various components, including its physical Hardware Interface, Device Controller, I/O registers, Interrupts, Device Drivers, and Operating System to support a fully functioning I/O system. Write up (100-200 words for each device) a summary of your research that outlines in your own words how each of these I/O Devices operate. Your write up must also include a drawing of a hardware and software block diagram illustrating how each of the before mentioned components work together to support the fully functioning I/O system. Provide a turnitin report for this part of the assignment. The assignment will not be accepted if the turnitin report is not submitted.

You will want to refer to your textbook readings in Chapter 5 as a resource to support this assignment. If necessary Google “good flow chart tutorials” to discover online tutorials and best practices for producing flow charts.

Deliverables:

1. Project header Page/Information about you (name, course, assignment name, date).
2. Research results for the layers of I/O Software.
3. Flow chart and theory of operation for how to handle Hardware Interrupts.
4. Block diagram and theory of operator for the keyboard and mouse I/O Devices.
5. Upload it all to LoudCloud.