LABORATORY #1

Anatomy of a Personal Computer

OBJECTIVE:

The objective of this laboratory exercise is twofold. The first objective is to learn to identify and use some of the tools that are typically necessary in order to assemble and disassemble electronic equipment. A second objective is to learn to identify and describe the different components of a personal computer. The ability to diagnose hardware problems in a computer begins with the ability to identify various components and apply your basic understanding of how those components work.

EQUIPMENT REQUIRED:

- Basic tools
    - Flat head screwdriver
    - Phillips head screwdriver
    - Needle Nose Pliers
    - Diagonal Cutters
    - Nut Drivers
    - Adjustable Wrench
    - Allen Wrenches
    - Torx Wrenches
    - Tweezers
    - Soldering iron

- Personal Computer

PRE-LAB:

Please review the documents on the course web site that describe the laboratory instructions for this course. You will find it under the **"Laboratory"** section. You are to follow these instructions for each of your assigned labs.

In preparation for the dissection of a computer, it will be necessary to research the following:

1. Basic tools used to disassemble electronic components.

    For this portion you must investigate the tools listed under **"Equipment Required"** and write a brief description of the tool and the proper use of it. Include pictures where appropriate.

2. Components you expect to find inside of a personal computer and how they are interconnected.

    For this portion you must investigate the internal components of a personal computer. You are to write a description of each component you expect to find and indicate what its purpose is. In addition, you are required to write a procedure to be used for the laboratory portion of the lab. This will include what you anticipate to do during the lab period. Be as specific as possible since this procedure will be the "roadmap" guideline you will use during the lab period.

During your research phase you should compile a list of questions that you expect to have answered in laboratory. In general, you should always try to answer these questions prior to laboratory. Educated "guesses" at this stage are allowed provided they are backed up by logical assumptions and thought (i.e., not random guesses).

There are many resources on the internet which will be useful in exploring the various parts of a computer. Included under the folder for Lab 1 are links that will be useful for your research. Please do not merely rely on the sites that are compiled for you. You should go further than those sites using such things as: the library, discussions with fellow students and possibly other faculty.

LAB:

For prelab you researched the list of basic tools that you would be using to disassemble a personal computer. You also put together a detailed procedure that you will follow in investigating the anatomy of a "real" personal computer.

Using your newly acquired knowledge of basic tools, and your prelab as a guide you are to disassemble the personal computer, being sure to identify and describe as many of the parts of the computer that you can and relate them with your prelab notes. By properly performing this lab you will obtain a basic understanding of the components of a personal computer and how they interconnect. In addition you will learn the proper use of common tools that are used in electronics.