CS 4540 Assignment 1

Due: Before class Tuesday

Purpose: Introduction to

                Device drivers

                Kernel and User Modes

                Approaches for security in different Operating Systems (OS)

Submit to ***E-Learning*** a .doc, .docx or text file.

You may fill in the info in the outline below.

Description:

Two parts:

1. Device driver writing, testing and safety.
2. Methods of downloading drivers to be sure they have not been altered

## CS 4540 A1 Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## Part 1

Device drivers **usually** are loaded or compiled into the kernel of an OS so they have access to everything in the computer with no protection.  You can read about them in your text book and/or at web pages like: <https://en.wikipedia.org/wiki/Device_driver>

You are to research and discuss the various methods used to protect the computer from malicious device drivers.  Give a real discussion with more than one sentence for each OS.

Discuss, at least, the preferred methods:

of driver writing,

testing and

how each OS helps the user determine which drivers are

safe and work well.

The Operating Systems:

         Microsoft Windows, The preferred methods

1. of driver writing,
   1. Method
   2. Reference (URL and Author)
   3. Why reference is valid
2. testing
   1. Method
   2. Reference
   3. Why reference is valid

3.       how the OS helps the user determine which drivers are safe and work well

1. Method
2. Reference
3. Why reference is valid

         Linux or Unix, The preferred methods

1. of driver writing,
   1. Method
   2. Reference
   3. Why reference is valid
2. testing
   1. Method
   2. Reference
   3. Why reference is valid

3.       how the OS helps the user determine which drivers are safe and work well

1. Method
2. Reference
3. Why reference is valid

         Apple OSX The preferred methods

1. of driver writing,
   1. Method
   2. Reference
   3. Why reference is valid
2. testing
   1. Method
   2. Reference
   3. Why reference is valid
3. how the OS helps the user determine which drivers are safe and work well
4. Method
5. Reference
6. Why reference is valid

Remember to give references for all information you include in your paper.  3 things, Where you got the information, who wrote it and why you think this source is valid.

## Part Two

When downloading a device driver malicious code can be inserted several ways. How does each OS help the user make sure their download is from the proper place and has not been altered?

Microsoft Windows

1. Method
2. Reference
3. Why reference is valid

Apple OSX

1. Method
2. Reference
3. Why reference is valid

Linux UNIX

1. Method
2. Reference
3. Why reference is valid