ECS518U Operating Systems

Lab 5 (13/02/18): Filesystems (inodes & links)

This exercise is assessed (Assessment date: 13/02/18 during your lab slot only).

# Answer Sheet

The following should be completed in addition to completing the PHP scripts.

## Step 1: Basic File Information

Describe the changes made to fileInfo0.php to get fileInfo1.php.

Attach or paste an example output.

Describe the three different types of time information stored in the inode. Which times are affected if you edit a file? Which times are affected if you change access permissions to a file?

## Step 2: Links

Explain the difference between Hard and Symbolic Links.

|  |  |  |
| --- | --- | --- |
| **Question** | **Symbolic Link** | **Hard Link** |
| What **file type** is returned by the PHP function filetype? |  |  |
| Explain why. |  |  |
| What do you observe with regards to the **inode numbers** of the target file and the new symbolic or hard link? |  |  |
| Explain why. |  |  |

What do you think is stored inside a symbolic link file? What information about the symbolic link file can provide evidence about this (e.g. in the output of a shell command such as ls -l?

Edit the target file of a hard and of a symbolic link. Using the stat shell command see what effect the edit has on the three time types in the inode of the hard and of the symbolic link. **Explain what you observe.**

## Step 3: Getting information about links

Describe the changes made to fileInfo1.php to get fileInfo2.php.

Attach or paste an example output.

## Step 4: Listing Contents of Sub-Directories

Describe the changes made to fileInfo1.php to get fileInfo3.php.

Attach or paste an example output.