

CS 450 Operating Systems

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Group#4 Programming Assignment 4

Build & Run Instructions

Simply build the xv-6 repository with the following command:

```
$ make clean
```

If there are some permission errors, execute the following command:

```
$ sudo chmod -R 777 filepath
```

After it builds, make and start the emulator by typing in:

```
$ make qemu-nox
```

This should now open the `CS450$` prompt to type in commands.

There are 5 programs to help run the assignment

directoryWalker

The program will also write out the inode associated with each file and directory.

```
$ directoryWalker
```

inodeTBWalker

Print out all allocated inodes and get this set of inodes from the inode table.

```
$ inodeTBWalker
```

CompareWalker

Compare the inode related output of two Walkers.

```
$ compareWalker
```

damageDirInode

Corrupting a file system

```
$ damageDirInode
```

Repairing Files

The following sequence will repair any inodes that are damaged:

```
$ directoryWalker  
$ inodeTBWalker  
$ compareWalker
```

```
$ damageDirInode  
$ recoverFile
```

NOTE: RUN ALL THE COMMANDS IN ORDER

TEST PROGRAM

Here is a sample program that can be used to test the walkers and programs

```
$ mkdir cs450  
$ mkdir cs450-1  
$ directoryWalker  
$ inodeTBWalker  
$ compareWalker  
$ damageDirInode 23 [insert inode of cs450]
```

Repair using:

```
$ directoryWalker  
$ inodeTBWalker  
$ compareWalker  
$ recoverFile
```

Verify results:

```
$ directoryWalker  
$ inodeTBWalker  
$ compareWalker
```