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CS 143A

Homework 7 Write-Up

Part 1

-Use master block to find inode for "/" on disk

-Open "/", look for entry "foo"

-This entry gives the disk block number for the inode for "foo"

-Read the inode for "foo" into memory

-The inode says where first data block is on disk

-Read that block into memory to access the data in the file

-Open "/foo", look for entry "bar"

-This entry gives the disk block number for the inode for "bar"

-Read the inode for "bar" into memory

-The inode says where second data block is on disk

-Read that block into memory to access the data in the file

Meaning there are three disk accesses required. One for the ROOT directory, one for foo, and one for bar.

Part 2

```
kippc@cyril-figgis 01:33:21 ~/143a/hw/hw7
$ myls /home/kippc/143a/hw
drwx------ 2 kippc netdev 4.1K Sep 27 09:30 hw0
drwxr-xr-x 2 kippc netdev 4.1K Oct 05 17:51 hw1
drwxr-xr-x 2 kippc netdev 4.1K Oct 23 08:01 hw2
drwxr-xr-x 2 kippc netdev 4.1K Oct 21 00:09 hw3
drwx------ 2 kippc netdev 4.1K Oct 27 01:40 hw4
drwx------ 2 kippc netdev 4.1K Nov 03 01:29 hw5
drwx------ 2 kippc netdev 4.1K Nov 10 00:47 hw6
drwxr-xr-x 2 kippc netdev 4.1K Nov 17 01:32 hw7
-rw------- 1 kippc netdev 0 Nov 16 21:42 test1.txt

/home/kippc/143a/hw/hw0
total
-rwx--x--x 1 kippc netdev 631 Sep 26 16:55 create_script
-rw------- 1 kippc netdev 115 Sep 26 16:42 main.cpp
-rw------- 1 kippc netdev 282 Sep 26 16:56 Makefile
-rw------- 1 kippc netdev 997 Sep 26 16:56 main.txt

/home/kippc/143a/hw/hw1
total
-rw------- 1 kippc netdev 1.8K Oct 05 17:38 average.c
-rw------- 1 kippc netdev 119 Oct 05 17:07 Makefile
-rw------- 1 kippc netdev 41 Sep 30 13:17 numbers.dat
-rw-r--r-- 1 kippc netdev 6.9K Oct 05 16:48 numbers2.dat
-rw------- 1 kippc netdev 31 Oct 05 16:47 SampleInput
-rw------- 1 kippc netdev 681 Oct 05 17:37 compute.c
-rw-r--r-- 1 kippc netdev 3.9K Oct 05 16:53 integers2.dat
-rw-r--r-- 1 kippc netdev 555 Oct 05 16:58 test_compute.py
-rw-r--r-- 1 kippc netdev 344 Oct 05 16:59 test_average.py

/home/kippc/143a/hw/hw2
total
-rw-r--r-- 1 kippc netdev 987 Oct 11 16:29 handle_signals.c
-rwx------ 1 kippc netdev 8.9K Oct 11 17:26 a.out
-rw-r--r-- 1 kippc netdev 1.1K Oct 11 16:25 test_signals.py
-rw------- 1 kippc netdev 627 Oct 11 17:00 send_signals.c
-rw-r--r-- 1 kippc netdev 853 Oct 11 16:25 test_send.py
-rw------- 1 kippc netdev 245.8K Oct 23 08:01 core.9371
-rw------- 1 kippc netdev 245.8K Oct 23 08:01 core.9315
-rw------- 1 kippc netdev 245.8K Oct 23 08:01 core.9436
-rw------- 1 kippc netdev 278.5K Oct 23 08:01 core.9341
-rw------- 1 kippc netdev 39 Oct 11 17:26 output

/home/kippc/143a/hw/hw3
total
-rw-r--r-- 1 kippc netdev 751 Oct 19 21:23 my_fork.c
-rw------- 1 kippc netdev 151 Oct 19 21:38 Makefile_my_fork
-rw-r--r-- 1 kippc netdev 1.3K Oct 21 00:08 my_shell.c
-rw-r--r-- 1 kippc netdev 898 Oct 19 20:11 test_my_fork.py
-rw------- 1 kippc netdev 155 Oct 19 21:41 Makefile_my_shell
-rw------- 1 kippc netdev 47 Oct 19 21:56 inputScript.txt

/home/kippc/143a/hw/hw4
```

```
kippc@cyril-figgis:~/143a/hw/hw7
kippc@cyril-figgis 01:33:23 ~/143a/hw/hw7
$ ls -lLR /home/kippc/143a/hw
/home/kippc/143a/hw:
total 32K
drwx------ 2 kippc netdev 4.0K Sep 27 09:30 hw0/
drwxr-xr-x 2 kippc netdev 4.0K Oct  5 17:51 hw1/
drwxr-xr-x 2 kippc netdev 4.0K Oct 23 08:01 hw2/
drwxr-xr-x 2 kippc netdev 4.0K Oct 21 00:09 hw3/
drwx------ 2 kippc netdev 4.0K Oct 27 01:40 hw4/
drwx------ 2 kippc netdev 4.0K Nov  3 01:29 hw5/
drwx------ 2 kippc netdev 4.0K Nov 10 00:47 hw6/
drwxr-xr-x 2 kippc netdev 4.0K Nov 17 01:32 hw7/
-rw------- 1 kippc netdev    0 Nov 16 21:42 test1.txt

/home/kippc/143a/hw/hw0:
total 16K
-rwx--x--x 1 kippc netdev 631 Sep 26 16:55 create_script*
-rw------- 1 kippc netdev 115 Sep 26 16:42 main.cpp
-rw------- 1 kippc netdev 997 Sep 26 16:56 main.txt
-rw------- 1 kippc netdev 282 Sep 26 16:56 Makefile

/home/kippc/143a/hw/hw1:
total 32K
-rw------- 1 kippc netdev 1.8K Oct  5 17:38 average.c
-rw------- 1 kippc netdev  681 Oct  5 17:37 compute.c
-rw-r--r-- 1 kippc netdev 3.8K Oct  5 16:53 integers2.dat
-rw------- 1 kippc netdev  119 Oct  5 17:07 Makefile
-rw-r--r-- 1 kippc netdev 6.8K Oct  5 16:48 numbers2.dat
-rw------- 1 kippc netdev   41 Sep 30 13:17 numbers.dat
-rw------- 1 kippc netdev   31 Oct  5 16:47 SampleInput
-rw-r--r-- 1 kippc netdev  344 Oct  5 16:59 test_average.py
-rw-r--r-- 1 kippc netdev  555 Oct  5 16:58 test_compute.py

/home/kippc/143a/hw/hw2:
total 476K
-rwx------ 1 kippc netdev 8.7K Oct 11 17:26 a.out*
-rw------- 1 kippc netdev 240K Oct 23 08:01 core.9315
-rw------- 1 kippc netdev 272K Oct 23 08:01 core.9341
-rw------- 1 kippc netdev 240K Oct 23 08:01 core.9371
-rw------- 1 kippc netdev 240K Oct 23 08:01 core.9436
-rw-r--r-- 1 kippc netdev  987 Oct 11 16:29 handle_signals.c
-rw------- 1 kippc netdev   39 Oct 11 17:26 output
-rw------- 1 kippc netdev  627 Oct 11 17:00 send_signals.c
-rw-r--r-- 1 kippc netdev  853 Oct 11 16:25 test_send.py
-rw-r--r-- 1 kippc netdev 1.2K Oct 11 16:25 test_signals.py

/home/kippc/143a/hw/hw3:
total 20K
-rw------- 1 kippc netdev   47 Oct 19 21:56 inputScript.txt
-rw------- 1 kippc netdev  151 Oct 19 21:38 Makefile_my_fork
-rw------- 1 kippc netdev  155 Oct 19 21:41 Makefile_my_shell
-rw-r--r-- 1 kippc netdev  751 Oct 19 21:23 my_fork.c
-rw-r--r-- 1 kippc netdev 1.3K Oct 21 00:08 my_shell.c
-rw-r--r-- 1 kippc netdev  898 Oct 19 20:11 test_my_fork.py
```

First screenshot shows the output of myls to the directory "/home/kippc/143a/hw",
second is a screenshot of ls –lLR. Unfortunately, I could not properly calculate the total
and couldn't get the syntax to match completely.

Part 3

```
kippc@cyril-figgis:~/143a/hw/hw7
kippc@cyril-figgis 02:17:17 ~/143a/hw/hw7
$ make -f Makefile_mydu
gcc -o mydu mydu.c -I.
kippc@cyril-figgis 02:17:32 ~/143a/hw/hw7
$ mydu /home/kippc/143a/hw
20       /home/kippc/143a/hw/hw0
36       /home/kippc/143a/hw/hw1
480      /home/kippc/143a/hw/hw2
24       /home/kippc/143a/hw/hw3
52       /home/kippc/143a/hw/hw4
76       /home/kippc/143a/hw/hw5
44       /home/kippc/143a/hw/hw6
56       /home/kippc/143a/hw/hw7
792      /home/kippc/143a/hw
kippc@cyril-figgis 02:17:41 ~/143a/hw/hw7
$ du /home/kippc/143a/hw
20       /home/kippc/143a/hw/hw0
36       /home/kippc/143a/hw/hw1
480      /home/kippc/143a/hw/hw2
24       /home/kippc/143a/hw/hw3
52       /home/kippc/143a/hw/hw4
76       /home/kippc/143a/hw/hw5
44       /home/kippc/143a/hw/hw6
56       /home/kippc/143a/hw/hw7
792      /home/kippc/143a/hw
kippc@cyril-figgis 02:17:47 ~/143a/hw/hw7
$
```

```
kippc@cyril-figgis:~/143a/hw/hw7
kippc@cyril-figgis 02:28:49 ~/143a/hw/hw7
$ du /var/www > out1.txt
kippc@cyril-figgis 02:29:07 ~/143a/hw/hw7
$ mydu /var/www > out2.txt
kippc@cyril-figgis 02:29:18 ~/143a/hw/hw7
$ diff -wB out1.txt out2.txt
kippc@cyril-figgis 02:29:27 ~/143a/hw/hw7
$ cat out1.txt
0        /var/www/cgi-bin
0        /var/www/html
0        /var/www
kippc@cyril-figgis 02:29:31 ~/143a/hw/hw7
$ cat out2.txt
0        /var/www/cgi-bin
0        /var/www/html
0        /var/www
kippc@cyril-figgis 02:29:35 ~/143a/hw/hw7
$
```

First screenshot shows my call to mydu first with the path "/home/kippc/143a/hw", and then the call to du showing that they are identical. Second screenshot shows the example case to test on the homework, however I did not use "… | sort –n" because this changed the ordering of the output and made the two files different from each other.