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Assignment-9

CS-314:Operating Systems Lab

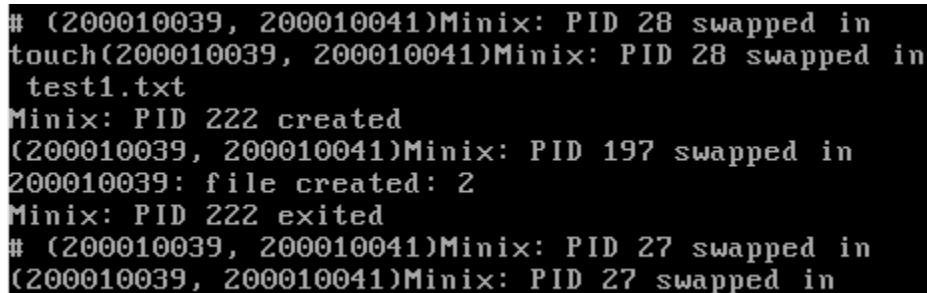
/home is a separate file system of the **mfs** type for this assignment. Only the file system mounted at **/home** needs to be taken care of when working on the mfs file system with this trace.

1. Create File

For the file creation, the file *open.c* at location: *minix/servers/vfs/open.c* was changed. Changes were made in function **common_open()**.

```
printf("200010039: file created: %llu\n", vp->v_inode_nr);
```

The below figure shows the implementation in Minix. Here, A simple file named test1.txt was created using *touch test1.txt*.



```
# (200010039, 200010041)Minix: PID 28 swapped in
touch(200010039, 200010041)Minix: PID 28 swapped in
test1.txt
Minix: PID 222 created
(200010039, 200010041)Minix: PID 197 swapped in
200010039: file created: 2
Minix: PID 222 exited
# (200010039, 200010041)Minix: PID 27 swapped in
(200010039, 200010041)Minix: PID 27 swapped in
```

2. Read File

For the file read, the file *read.c* at location: *minix/servers/vfs/read.c* was changed. Changes were made in function *read_write()*.

```
printf("file read: %llu; nbytes = %zu; offset = %llu\n",
vp->v_inode_nr, size, f->filp_pos);
```

The following figures shows the implementation in Minix.

In order to read the file, *cat test1.txt* was used after some strings were written in file using Nano.

```

cat test1.txt
Minix: PID 226 created
(200010039, 200010041)Minix: PID 201 swapped in
200010039: file read: 2; nbytes = 4096; offset = 17
Printing in file
200010039: file read: 2; nbytes = 4096; offset = 17
Minix: PID 226 exited

```

3. Write File

For the file write, the file *read.c* at location: *minix/servers/vfs/read.c* was changed. Changes were made in function *read_write()*.

```

printf("file written: %llu; nbytes = %zu; offset = %llu\n",
vp->v_inode_nr, size, f->filp_pos);

```

The following figure shows the implementation for the file write case. Using, *echo "Printing in file" > test1.txt* to write into the file.

```

# echo "(200010039, 200010041)Minix: PID 27 swapped in
Printing in file"(200010039, 200010041)Minix: PID 27 swapped in
> test1.txt
200010039: file write: 2; nbytes = 17; offset = 17
# (200010039, 200010041)Minix: PID 28 swapped in

```

4. Delete File

To delete a file the *link.c* located in *minix/servers/vfs/link.c* was changed. Changes were made in function *do_unlink()*.

```

printf("200010039: file deleted: %llu\n", vp->video");

```

The following figure shows the implementation of the file delete case. Using *rm test1.txt* to delete the file.

```

Minix: PID 227 exited
# rm test1.(200010039, 200010041)Minix: PID 27 swapped in
txt
Minix: PID 228 created
(200010039, 200010041)Minix: PID 203 swapped in
200010039: file deleted: 2
Minix: PID 228 exited

```