Operating Systems Lab

Lab – 9

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1. Creating File:

For this, the file minix/servers/vfs/open.c was changed at the common_open() function.

```
if (r == OK)
{
    exist = FALSE;
    struct vmnt *vmpPath;
    vmpPath = find_vmnt(vp->v_fs_e);
    if (strcmp(vmpPath->m_mount_path, "/home") == 0)
        printf("MINIX 210010012: file created: %llu\n", vp->v_inode_nr);
} /* We just created the file */
```

```
# touch test1.txt
MINIX 210010012: PID 199 created
Time allotted = 200, Quantum used = 200
210010012 PID 174 swapped in
MINIX 210010012: file created: 82
MINIX 210010012: PID 199 exited
```

A file with inode 3 has been created.

2. Reading File & Writing File:

For this, the file minix/servers/vfs/read.c was changed at the read_write() function.

```
struct vmnt *vmp;
vmp = find_vmnt(vp->v_fs_e);
if (rw_flag == WRITING && strcmp(vmp->m_mount_path, "/home") == 0)
    printf("MINIX 210010012: file write: %llu; nbytes = %zu; offset = %llu\n", vp->v_inode_nr, size, f->filp_pos);

if (rw_flag == READING && strcmp(vmp->m_mount_path, "/home") == 0)
    printf("MINIX 210010012: file read: %llu; nbytes = %zu; offset = %llu\n", vp->v_inode_nr, size, f->filp_pos);
```

```
MINIX 210010012: PID 199 exited
# echo "hello world" > test1.txt
MINIX 210010012: file write: 82; nbytes = 12; offset = 12
#
```

```
# cat test1.txt
MINIX 210010012: PID 200 created
Time allotted = 200, Quantum used = 200
210010012 PID 175 swapped in
MINIX 210010012: file read: 82; nbytes = 4096; offset = 12
hello world
MINIX 210010012: file read: 82; nbytes = 4096; offset = 12
MINIX 210010012: PID 200 exited
```

3. Deleting File:

For this, the file minix/servers/vfs/link.c was changed at the do_unlink() function.

```
lookup_init(&stickycheck, resolve.l_path, PATH_RET_SYMLINK, &vmp2, &vp);
stickycheck.l_vmnt_lock = VMNT_READ;
stickycheck.l_vnode_lock = VNODE_READ;
vp = advance(dirp, &stickycheck, fp);

if (strcmp(vmp->m_mount_path, "/home") == 0)
  printf("MINIX 210010012: file deleted: %llu\n", vp->v_inode_nr);
```

```
MINIX 210010012: PID 200 exited
# rm test1.txt
MINIX 210010012: PID 201 created
Time allotted = 200, Quantum used = 200
210010012 PID 176 swapped in
MINIX 210010012: file deleted: 82
MINIX 210010012: PID 201 exited
```