

Report Assignment 10

Suyash Gaurav (210010054) & Vivek Gaikwad (210010059)

Question

In this lab, you are required to Implement immediate files in the Minix File System, for files of size up to 32 bytes. Implement only for the file system mounted at /home.

Functionality

File Creation:

you can start by creating the file as an immediate one. When a file grows beyond 32B, then you can make it a regular file.

```
# touch temp.txt
Minix 210010059: Allotted Quantum: 200 ms
Minix 210010059: Used Quantum: 200 ms
Minix 210010059: PID 113 swapped in
MINIX 210010059: file created: 182
#
```

File read:

if it is an immediate file, you can respond with the inode structure contents. If not, you can follow the default behavior of looking up zones.

```
# touch trial.txt
Minix 210010059: Allotted Quantum: 200 ms
Minix 210010059: Used Quantum: 200 ms
Minix 210010059: PID 115 swapped in
MINIX 210010059: file created: 183
# echo "Hello world" > trial.txt
Minix 210010054_210010059: Writing to Immediate File
MINIX 210010059: file write: 183; nbytes = 12; offset = 12
# cat trial.txt
Minix 210010059: Allotted Quantum: 200 ms
Minix 210010059: Used Quantum: 200 ms
Minix 210010059: PID 116 swapped in
Minix 210010054_210010059: Reading from Immediate File
Minix 210010054_210010059: Content of Immediate File:
Hello world
Minix 210010054_210010059: EOF Immediate File
MINIX 210010059: file read: 183; nbytes = 4096; offset = 0
#
```

File write:

similar to read. You must take care to ensure that if you want to write to the inode structure, then the new file size is still within 32B. When a regular file shrinks to less than 32 bytes, there is no need to come back to immediate mode.

```
# echo "Hello from vivek" > temp.txt
Minix 210010054_210010059: Writing to Immediate File
MINIX 210010059: file write: 182; nbytes = 17; offset = 17
#
```

File size less than 32

```
# echo "Hello from vivek" > temp.txt
Minix 210010054_210010059: Writing to Immediate File
MINIX 210010059: file write: 182; nbytes = 17; offset = 17
# echo "Hello from Sugash" > temp.txt
Minix 210010054_210010059: Writing to Immediate File
MINIX 210010059: file write: 182; nbytes = 18; offset = 18
# echo "Hello from vivek and Sugash also from qwertyuioasdfghjklzxcvbnm,qwertyuiopasdfghjklzxcvbnm\n" > temp.txt
MINIX 210010059: file write: 182; nbytes = 93; offset = 93
#
```

File size greater than 32

File delete:

deleting immediate files does not require any handling of zones.

```
# rm temp.txt
Minix 210010059: Allotted Quantum: 200 ms
Minix 210010059: Used Quantum: 200 ms
Minix 210010059: PID 117 swapped in
file deleted: 182
```