CS 314 – Operating Systems Lab

180010008

Lab-7

What is the motive of this lab →

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.

Think about what functionalities need to be changed to implement immediate files. Some broad points:

● 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.

● 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.

● 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.

● File delete: deleting immediate files does not require any handling of zones.

Some Steps explaining the outcome of my modified code →

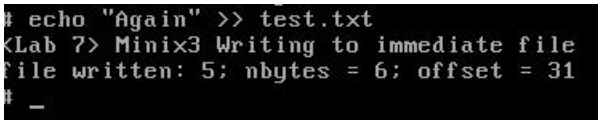
- Building Done!

```
Done.
Build started at:  Sun Mar 21 22:05:28 IST 2021
Build finished at: Sun Mar 21 22:14:48 IST 2021
Minix: PID 217 exited
#
```

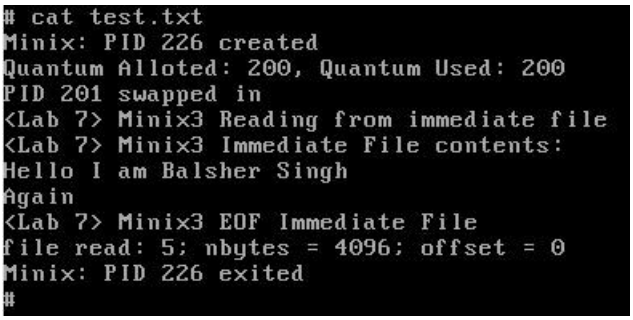
- Creating new file and adding some text so that total size of file is less than 32 bytes.

```
# echo "Hello I am Balsher Singh" > test.txt
file created: 5
<Lab 7> Minix3 Writing to immediate file
file written: 5; nbytes = 25; offset = 25
# _
```

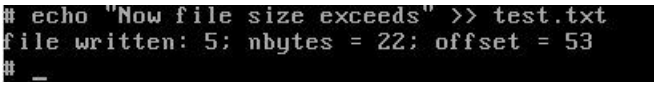
- Again, writing to the immediate file so that its total size still doesn't cross 32 bytes.



- Now, reading from the immediate file, it prints "Reading from immediate file" and "EOF immediate file".



- Now, add more text to the file so that it exceeds 32 bytes limit size. Now, this file becomes a usual file.



Changes made to the files attached in the zip.