The github link is https://github.tamu.edu/kausht14/OS_MP7

Design Steps:

a) Run make clean to remove all bin and locked files
b) Run make.
c) **sh copykernel.sh** is the command used because ./copykernel.sh is asking for permissions.
d) Bochs -f bochsrc.bxrc
e) The format function takes some time because of the slow response of the disk. So a message has been put on the screen Please wait for 15 seconds….
f) Once the format is done, opening reading closing looking up files deleting the files once the scope is exited everything has been successfully performed.
g) The following files have been performed and the design steps have been mentioned clearly.
h) All the useful functions have been clearly commented.
i) The screenshots were presented for various sequences during the exercise function as in kernel.C

FileSystem.C/H:

1) A bitmap has been implemented similar to simple_frame_pool.c given in MP2 to keep track of free and used blocks using a mask 0x80 to find which blocks have been used.
2) Also Inode* inodes is used to keep track of inodes
3) Class Inode contains all the metadata related to a file like the id, starting block, current position, total blocks and also a pointer to a file system so as to access the members easily
4) Helper functions like a function to get a free block and also a function to add freed blocks to the pool of free blocks and simultaneously update the bitmap have been developed.

File.C/H:

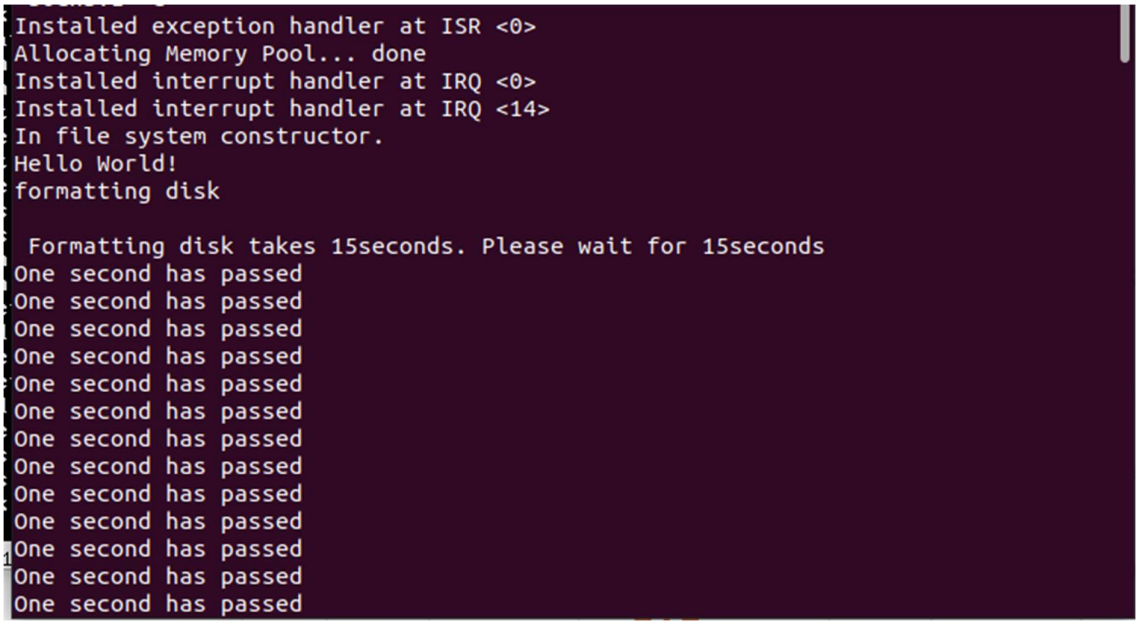
1) All file related metadata is also stored like the file identifier, disk related info for a particular file like starting block, current block, total number of blocks.
2) Also, a constructor for creating a file by initialising start blocks, total blocks, current position.
3) Also the functions Read from a file, Write to a file, EoF checking, Resetting a file have been clearly implemented and clearly commented.

Makefile:

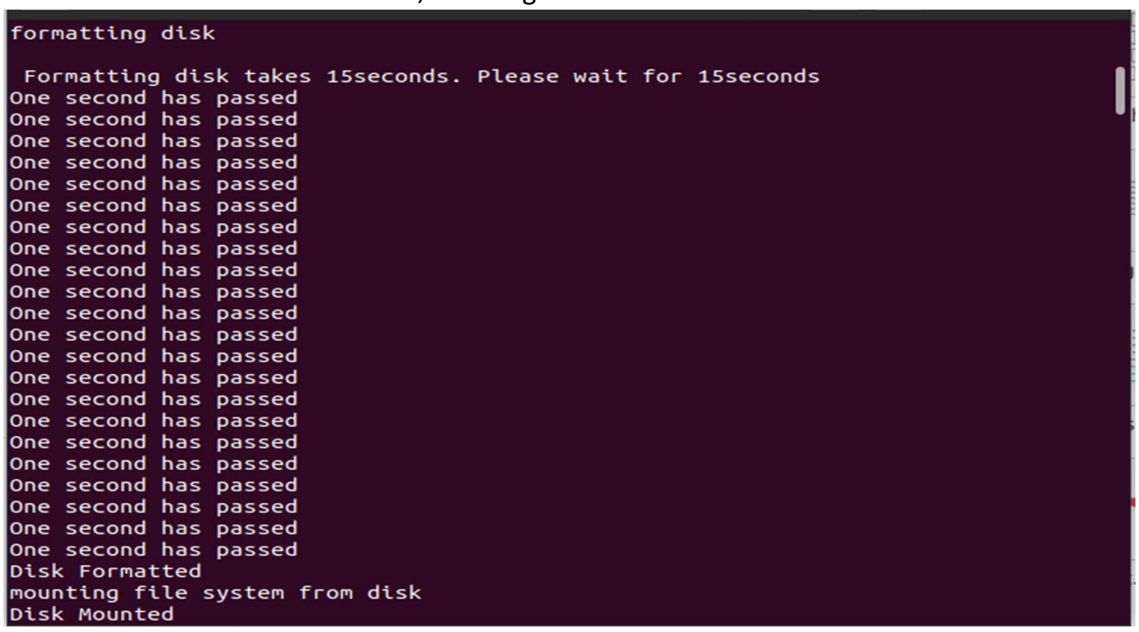
1) The makefile has been modified to remove c.img.lock , d.img.lock to cleanly start with the make
2) The modified make file cleans out the locks and helps in starting new build easily
3) The bonus part has been tried but due to incomplete work has not been uploaded.

RESULTS:

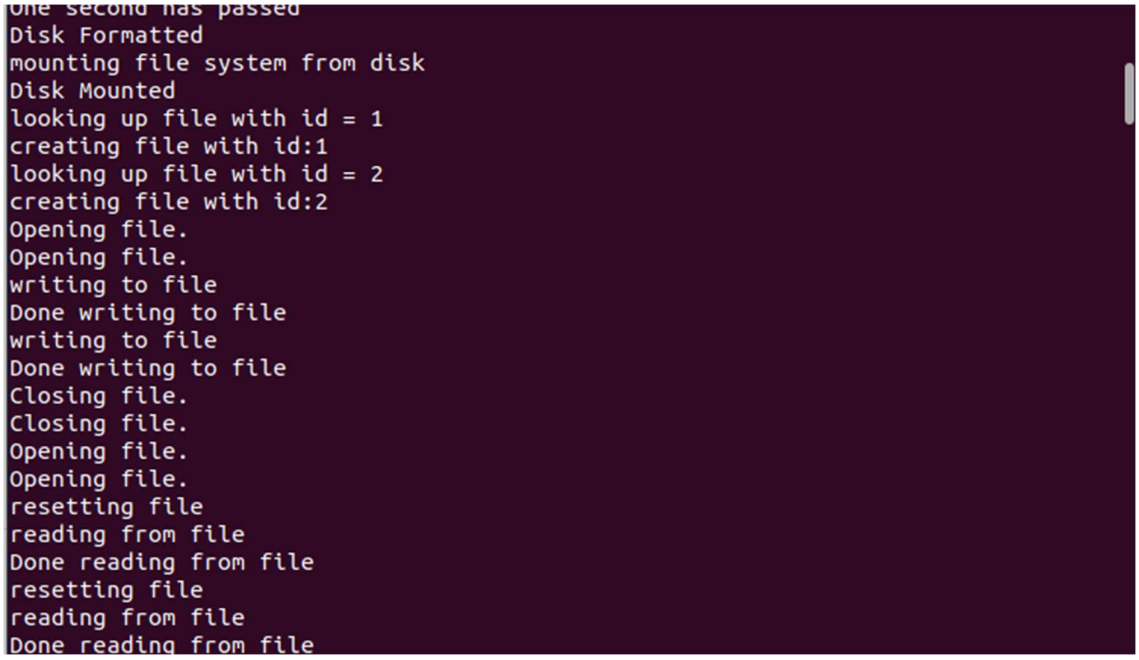
1) Initialisation of functions and constructors



2) After the disk has been formatted, Mouting the disk …



3) Inside the exercise function after the disk has been formatted and mounted. The screenshot includes file **opening**, **closing**, **reading** and **writing, looking up file**, **resetting**



4) The cases of file **deleting files** with id 1 and 2 . Later **while creating again**, it **looks up the file** if the files exist or not and then creates the new files if they do not exist