Readme
Project3 : File System Tools
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A **readme** file describes how to install your enhanced MINIX and how to execute your test programs, and I will show the way as follows.

1. Install the enhanced MINIX

In order to run the code, you need to move all the files to a directory and run. The following steps are the one you need to follow.

```
$ chmod +x deploy.sh
$ ./deploy.sh
```

The "*chmod +x*" is to give a executable permission to the file. In the shell file "deploy.sh", we wrote a set of commands which make them copy and replace all of the files to the applicable directories.

```
#!/bin/sh
cp -pf includes/repair.h /usr/include/repair.h
cp -pf includes/dirwalker.h /usr/include/
cp -pf includes/vfsif.h /usr/src/include/minix/vfsif.h
cp -pf mfs/misc.c /usr/src/servers/mfs/misc.c
cp -pf mfs/proto.h /usr/src/servers/mfs/proto.h
cp -pf mfs/table.c /usr/src/servers/mfs/table.c
cp -pf vfs/repair.c /usr/src/servers/vfs/repair.c
cp -pf vfs/proto.h /usr/src/servers/vfs/proto.h
cp -pf vfs/table.c /usr/src/servers/vfs/table.c
cp -pf vfs/Makefile /usr/src/servers/vfs/Makefile
```

Then, changes the directory and finally executes the following commands in order to save all contents and reboots the system.

cd /usr/src/releasetools
make hdboot && sync && reboot

Now, the new system calls we implemented are ready to use.

2. Run the test code

In order to test the functions that the project asks for, we designed “demo code” to make sure all the functions work correctly. These are the steps we follow.

1) Before run any demo programs, please type “make”.
2) To test the tools we implemented, we made the following demo files.

- demo_walker.c
- demo_bitmaprepair.c

3) To test inodebitmapwalker,you need to run demo_walker.o with 2 parameters,the first is a path name you want to walk. In minix 3.2, it can only be “/home” or “/usr” or “/”. The second 0. e.g:”./demo_walker /home 0”
4) To test zonebitmapwalker,you need to run demo_walker.o with 2 parameters,the first is a path name you want to walk. In minix 3.2, it can only be “/home” or “/usr” or “/”. The second 1 e.g:”./demo_walker /home 1”
5) To test zonebitmapwalker,you need to run demo_walker.o with 2 parameters,the first is a path name you want to walk. The second 2.e.g:”./demo_walker /home 2”
6) To test inodebitmapfixer, you need to run demo_fixer.o with 3 parameters. The first is inode number,the second is the value you want the corresponding bit in bitmap to be set. That third is 0. e.g:”./demo_fixer 1 0 0” (In this demo, we choose to perform the test process on “/home” directory since this mount point has very few files, it is easy for us to check the entire process.This also applies to zonebitmapfixer demo).
7) To test zonebitmapfixer, you need to run demo_fixer.o with 3 parameters. The first is inode number,the second is the value you want the corresponding bit in bitmap to be set. That third is 1. e.g:”./demo_fixer 7000 1 1” . This will mark the 7000th zone as used.

Then, you can see the result which we expect to see.