Gebze Technical University

Department of Computer Engineering

CSE 312 /CSE 504

Operating Systems Spring 2021

Homework # 4

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Part 1

Directory Structure:

[filename | attribute | date_time | first_block | size]

Filename: 21 bytes

Attribute: 1 byte

Date_time: 4 bytes

First_block: 2 bytes

Size: 4 bytes

Free Blocks:

The information about which block is free or not is kept in File allocation table. If a block is empty, the corresponding row for that block in FAT table has a value of -2. If it is allocated, it can be all the numbers between 2 to the 12 and -1.

Super Block:

In the super block, I store the block size, total block count, free blocks count, number of files and number of directories. I don’t store anything special for root directory location since root directory is always the first block of the file system.

Part 2 & Part 3

Names of the Functions That Handles the File System Operations:

```
void dir(fat12_fs_t *fsp, char *path);
int mkdir(fat12_fs_t *fsp, char *path);
int rmdir(fat12_fs_t *fsp, char *path);
void dumpe2fs(fat12_fs_t *fsp);
int write(fat12_fs_t *fsp, char *path, char *file_path);
int read(fat12_fs_t *fsp, char *path, char *file_path);
int del(fat12_fs_t *fsp, char *path);
```