**ASSIGNMENT 11**

#include <stdio.h>

#define BLOCK\_SIZE 4096 // 4 KB

#define DIRECTORY\_ENTRY\_SIZE 4 // 32 bits = 4 bytes

#define FAT\_ENTRY\_SIZE 1 // 8 bits = 1 byte

void calculate\_max\_files() {

int max\_files = BLOCK\_SIZE / DIRECTORY\_ENTRY\_SIZE;

printf("=== (a) Maximum Number of Files ===\n");

printf("Directory block size: %d bytes\n", BLOCK\_SIZE);

printf("Each directory entry: %d bytes\n", DIRECTORY\_ENTRY\_SIZE);

printf("Maximum number of files: %d\n", max\_files);

}

void calculate\_max\_file\_size() {

int max\_file\_blocks = BLOCK\_SIZE / FAT\_ENTRY\_SIZE;

printf("\n=== (b) Maximum File Size in Blocks ===\n");

printf("FAT block size: %d bytes\n", BLOCK\_SIZE);

printf("Each FAT entry: %d byte\n", FAT\_ENTRY\_SIZE);

printf("Maximum file size: %d blocks\n", max\_file\_blocks);

}

int main() {

calculate\_max\_files();

calculate\_max\_file\_size();

return 0;

}