File Organization Techniques

Single-Level Directory Structure

```
liveuser@localhost-live:~$ cat > single_level.c
#include <stdio.h>
#include <string.h>

struct Directory {
    char dname[10], fname[10][10];
    int fcnt;
};

int main() {
    struct Directory dir;
    int i;

    dir.fcnt = 0;

    printf("Enter name of directory: ");
    scanf("%s", dir.dname);

    printf("Enter number of files: ");
    scanf("%d", &dir.fcnt);

    printf("Enter file names:\n");
    for (i = 0; i < dir.fcnt; i++)
        scanf("%s", dir.fname[i]);

    printf("\nDirectory Name: %s\n", dir.dname);
    printf("Files:\n");
    for (i = 0; i < dir.fcnt; i++)
        printf("%s\n", dir.fname[i]);

    return 0;
}
liveuser@localhost-live:~$ gcc single_level.c -o single_level
./single_level
Enter name of directory:  student
Enter number of files: 3
Enter file names:
file1
file2
file3

Directory Name: student
Files:
file1
file2
file3
liveuser@localhost-live:~$
```

Two-Level Directory Structure

```
liveuser@localhost-live:~$ cat > two_level.c
#include <stdio.h>
#include <string.h>

struct Directory {
    char dname[10], fname[10][10];
    int fcnt;
};

int main() {
    struct Directory dir[10];
    int i, j, count;

    printf("Enter number of users: ");
    scanf("%d", &count);

    for (i = 0; i < count; i++) {
        printf("Enter name of user %d: ", i + 1);
        scanf("%s", dir[i].dname);

        printf("Enter number of files in %s: ", dir[i].dname);
        scanf("%d", &dir[i].fcnt);

        printf("Enter file names:\n");
        for (j = 0; j < dir[i].fcnt; j++)
            scanf("%s", dir[i].fname[j]);
    }

    printf("\nDirectory Structure:\n");
    for (i = 0; i < count; i++) {
        printf("\nUser: %s\n", dir[i].dname);
        printf("Files:\n");
        for (j = 0; j < dir[i].fcnt; j++)
            printf("%s\n", dir[i].fname[j]);
    }

    return 0;
}
```

```
liveuser@localhost-live:~$ gcc two_level.c -o two_level
./two_level
Enter number of users: 2
Enter name of user 1: diwi
Enter number of files in diwi: 2
Enter file names:
assignment
report
Enter name of user 2: stea
Enter number of files in stea: 1
Enter file names:
code

Directory Structure:

User: diwi
Files:
assignmentreport
report

User: stea
Files:
code
liveuser@localhost-live:~$
```