# 12a) Single Level File Organization Technique

## Program Code:

```c
#include <stdio.h>
#include <string.h>
struct Directory {
    char name[20];
    char files[10][20];
    int fileCount;
};
int main() {
    struct Directory dir;
    int i;
    printf("Enter directory name: ");
    scanf("%s", dir.name);
    printf("Enter number of files: ");
    scanf("%d", &dir.fileCount);
    for(i = 0; i < dir.fileCount; i++) {
        printf("Enter file name %d: ", i + 1);
        scanf("%s", dir.files[i]);
    }
    printf("\nDirectory Name: %s\n", dir.name);
    printf("Files:\n");
    for(i = 0; i < dir.fileCount; i++) {
        printf("  %s\n", dir.files[i]);
    }
    return 0;
}
```

## Output:

```
PS C:\Users\kamal\OneDrive\Desktop\program\OS program> ./1lfileorg.exe
Enter directory name: CSE
Enter number of files: 2
Enter file name 1: Staff
Enter file name 2: Student

Directory Name: CSE
Files:
  Staff
  Student
```

## 12b) Two-level File Organization Technique

## Program Code:

```c
#include <stdio.h>
#include <string.h>
struct SubDirectory {
    char name[20];
    char files[10][20];
    int fileCount;
};
struct Directory {
    char name[20];
    struct SubDirectory subDirs[5];
    int subDirCount;
};
int main() {
    struct Directory dir;
    int i, j;
    printf("Enter main directory name: ");
    scanf("%s", dir.name);
    printf("Enter number of subdirectories: ");
    scanf("%d", &dir.subDirCount);
    for(i = 0; i < dir.subDirCount; i++) {
        printf("\nEnter name of subdirectory %d: ", i + 1);
        scanf("%s", dir.subDirs[i].name);
        printf("Enter number of files in subdirectory %s: ", dir.subDirs[i].name);
        scanf("%d", &dir.subDirs[i].fileCount);
        for(j = 0; j < dir.subDirs[i].fileCount; j++) {
            printf("Enter file name %d: ", j + 1);
            scanf("%s", dir.subDirs[i].files[j]);
        }
    }
    printf("\nMain Directory: %s\n", dir.name);
    for(i = 0; i < dir.subDirCount; i++) {
        printf(" Subdirectory: %s\n", dir.subDirs[i].name);
        for(j = 0; j < dir.subDirs[i].fileCount; j++) {
            printf("   File: %s\n", dir.subDirs[i].files[j]);
        }
    }
    return 0;
}
```

## Output:

```
PS C:\Users\kamal\OneDrive\Desktop\program\OS program> ./21fileorg.exe
Enter main directory name: REC
Enter number of subdirectories: 2

Enter name of subdirectory 1: IT
Enter number of files in subdirectory IT: 2
Enter file name 1: Staff
Enter file name 2: Student

Enter name of subdirectory 2: CSE
Enter number of files in subdirectory CSE: 2
Enter file name 1: Staff
Enter file name 2: Student

Main Directory: REC
 Subdirectory: IT
   File: Staff
   File: Student
 Subdirectory: CSE
   File: Staff
   File: Student
```