OS LAB MANUAL (CS23431)

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EX.NO:12

File Organization Technique- Single and Two level directory

Aim: To implement File Organization Structures in C are:

a. Single Level Directory

b. Two-Level Directory

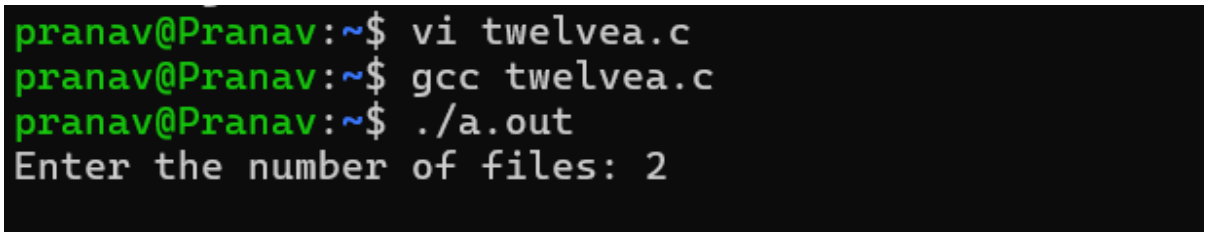
A) Single Level Directory

Program:

```
#include <stdio.h>
#include <string.h>

int main() {
    int n, i;
    char files[10][30];

    printf("Enter the number of files: ");
    scanf("%d", &n);

    printf("\nCreating Single-Level Directory Structure...\n");

    for (i = 0; i < n; i++) {
        printf("\nEnter the name of file %d: ", i + 1);
        scanf("%s", files[i]);
```

```
        printf("\n+-----------------+\n");
        printf("|  Root Directory |\n");
        printf("+-----------------+\n");

        for (int j = 0; j <= i; j++) {
            printf("        |\n");
            printf("        +--> [ %s ]\n", files[j]);
        }
    }

    return 0;
}
```

Input:



Output:

```
pranav@Pranav:~$ ./a.out
Enter the number of files: 2

Creating Single-Level Directory Structure...

Enter the name of file 1: file1

+-----------------+
|  Root Directory |
+-----------------+
        |
        +--> [ file1 ]

Enter the name of file 2: file2

+-----------------+
|  Root Directory |
+-----------------+
        |
        +--> [ file1 ]
        |
        +--> [ file2 ]
pranav@Pranav:~$
```

B) Two-Level Directory :

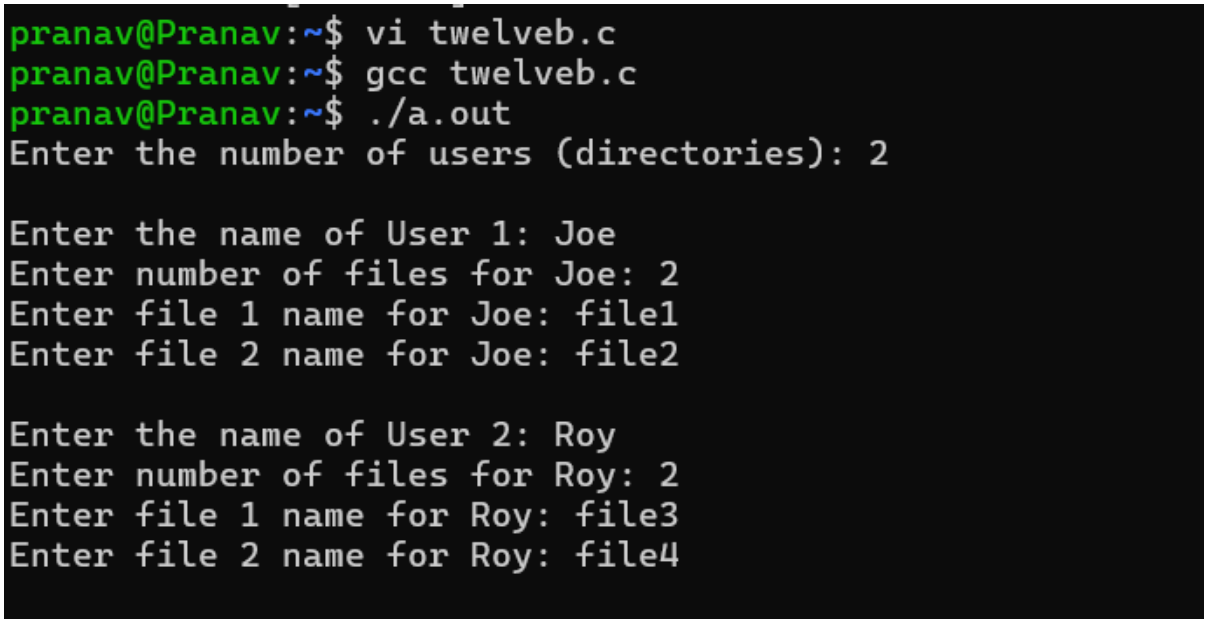
Program:

```
#include <stdio.h>

#include <string.h>


struct File {

   char name[30];

};


struct User {

   char name[30];

   int fileCount;

   struct File files[10];

};
```

```
int main() {
    int userCount, i, j;
    struct User users[10];

    printf("Enter the number of users (directories): ");
    scanf("%d", &userCount);

    for (i = 0; i < userCount; i++) {
        printf("\nEnter the name of User %d: ", i + 1);
        scanf("%s", users[i].name);

        printf("Enter number of files for %s: ", users[i].name);
        scanf("%d", &users[i].fileCount);

        for (j = 0; j < users[i].fileCount; j++) {
            printf("Enter file %d name for %s: ", j + 1, users[i].name);
            scanf("%s", users[i].files[j].name);
        }
    }

    printf("\n\nTwo-Level Directory Structure:\n");
    printf("+--------------------------+\n");
    printf("|      Root Directory      |\n");
    printf("+--------------------------+\n");

    for (i = 0; i < userCount; i++) {
        printf("       |\n");
        printf("       +--> User: %s\n", users[i].name);
        for (j = 0; j < users[i].fileCount; j++) {
            printf("            |\n");
```

```
            printf("            +--> File: %s\n", users[i].files[j].name);
        }
    }

    return 0;
}
```

Input:



Output:

```
pranav@Pranav:~$ ./a.out
Enter the number of users (directories): 2

Enter the name of User 1: Joe
Enter number of files for Joe: 2
Enter file 1 name for Joe: file1
Enter file 2 name for Joe: file2

Enter the name of User 2: Roy
Enter number of files for Roy: 2
Enter file 1 name for Roy: file3
Enter file 2 name for Roy: file4


Two-Level Directory Structure:
+--------------------------+
|       Root Directory     |
+--------------------------+
        |
        +--> User: Joe
              |
              +--> File: file1
              |
              +--> File: file2
        |
        +--> User: Roy
              |
              +--> File: file3
              |
              +--> File: file4
pranav@Pranav:~$
```