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
c. Hierarchical Directory Structure
d. Directed Acyclic Graph Structure

a. Single Level Directory

Program code :

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

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

int main() {
    int i;
    printf("Enter name of directory: ");
    scanf("%s", dir.dname);
    printf("Enter number of files: ");
    scanf("%d", &dir.fcnt);

    for(i = 0; i < dir.fcnt; i++) {
        printf("Enter file name %d: ", i + 1);
        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;
}
```

OUTPUT :

```
Enter name of directory: root
Enter number of files: 2
Enter file name 1: first.txt
Enter file name 2: second.txt

Directory Name: root
Files:
  first.txt
  second.txt
```

b. Two-level directory Structure

Program code:

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

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

int main() {
    int i, j, ucnt;

    printf("Enter the name of root directory: ");
    char root[10];
    scanf("%s", root);

    printf("How many users (directories under %s): ", root);
    scanf("%d", &ucnt);

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

        printf("How many files for %s: ", dir[i].dname);
        scanf("%d", &dir[i].fcnt);
```

```
        for(j = 0; j < dir[i].fcnt; j++) {
            printf("Enter file name %d under %s: ", j + 1, dir[i].dname);
            scanf("%s", dir[i].fname[j]);
        }
    }

    printf("\nDirectory Structure:\n");
    printf("Root Directory: %s\n", root);

    for(i = 0; i < ucnt; i++) {
        printf(" User Directory: %s\n", dir[i].dname);
        for(j = 0; j < dir[i].fcnt; j++) {
            printf("   File: %s\n", dir[i].fname[j]);
        }
    }

    return 0;
}
```

OUTPUT :

```
Enter the name of root directory: root
How many users (directories under root): 1
Enter name of user directory 1: user_1
How many files for user_1: 2
Enter file name 1 under user_1: first.txt
Enter file name 2 under user_1: second.txt

Directory Structure:
Root Directory: root
 User Directory: user_1
   File: first.txt
   File: second.txt
```