Ex. No.: 12
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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>

struct File {
   char name[20];
   int size;
};

int main() {
   struct File files[20];
   int n, i;

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

   for (i = 0; i < n; i++) {
      printf("Enter name of file %d: ", i + 1);
      scanf("%s", files[i].name);
      printf("Enter size of file %d: ", i + 1);
      scanf("%d", &files[i].size);
   }

   printf("\nFiles in Single Level Directory:\n");
   printf("File Name\tSize\n");
   for (i = 0; i < n; i++) {
      printf("%s\t\t%d KB\n", files[i].name, files[i].size);
   }

   return 0;
}
```

Output:

```
Enter number of files: 3
Enter name of file 1: file1.txt
Enter size of file 1: 100
Enter name of file 2: data.csv
Enter size of file 2: 200
Enter name of file 3: report.pdf
Enter size of file 3: 300

Files in Single Level Directory:
File Name   Size
file1.txt       100 KB
data.csv        200 KB
report.pdf      300 KB
```

Program:

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

struct File {
   char name[20];
};

struct Directory {
   char user[20];
   struct File files[10];
   int fileCount;
};

int main() {
   struct Directory dirs[10];
   int n, i, j;

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

   for (i = 0; i < n; i++) {
      printf("\nEnter user %d name: ", i + 1);
      scanf("%s", dirs[i].user);
      printf("Enter number of files for user %s: ", dirs[i].user);
      scanf("%d", &dirs[i].fileCount);

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

   printf("\nTwo-Level Directory Structure:\n");
   for (i = 0; i < n; i++) {
      printf("\nUser: %s\n", dirs[i].user);
      printf("Files: ");
      for (j = 0; j < dirs[i].fileCount; j++) {
         printf("%s ", dirs[i].files[j].name);
      }
      printf("\n");
   }

   return 0;
}
```

Output:

```
Enter number of users: 2

Enter user 1 name: alice
Enter number of files for user alice: 2
Enter name of file 1 for user alice: report.doc
Enter name of file 2 for user alice: notes.txt

Enter user 2 name: bob
Enter number of files for user bob: 1
Enter name of file 1 for user bob: datas.csv

Two-Level Directory Structure:

User: alice
Files: report.doc notes.txt

User: bob
Files: datas.csv
```

Result:

Thus, the Single level and Two level directory program was implemented successfully.