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
c. Hierarchical Directory Structure
d. Directed Acyclic Graph Structure

a. Single Level

Directory

ALGORITHM

1. Start
2. Declare the number, names and size of the directories and file names.
3. Get the values for the declared variables.
4. Display the files that are available in the directories.
5. Stop.

PROGRAM:

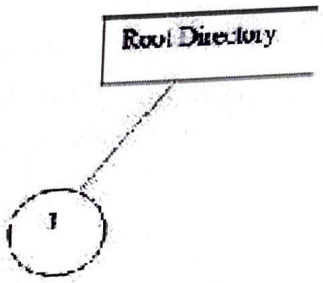
```
#include<stdio.h>
#include<string.h>
struct File {
    char name[20];
};
int main(){
    int n,i;
    struct File files[50];
    printf("Enter the number of files: ");
    scanf("%d",&n);
    getchar();
    for(i=0; i<n; i++){
        printf("Enter the name of the file %d: ",i+1);
        fgets(files[i].name, sizeof(files[i].name), stdin);
        files[i].name[strcspn(files[i].name, "\n")] = '\0';
    }
    printf("\n--- Single Level Directory Structure---\n");
    printf("Root Directory\n");
    for(i=0; i<n; i++){
        printf("\n--> %s\n", files[i].name);
    }
    return 0;
}
```

OUIPUI:

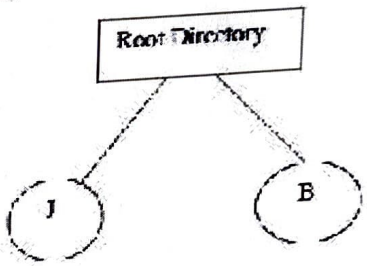
Enter the Number of files

2

Enter the file1 J



Enter the file2 B



b. Two-level directory Structure

ALGORITHM:

1. Start
2. Declare the number, names and size of the directories and subdirectories and file names.
3. Get the values for the declared variables.
4. Display the files that are available in the directories and subdirectories.
5. Stop.

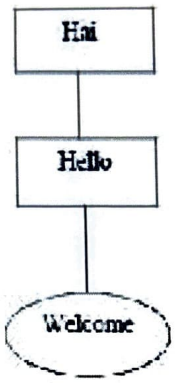
PROGRAM:

```
#include <stdio.h>
#include <string.h>
struct File {
    char name[20];
};
struct Directory {
    char name[20];
    struct File files[10];
    int fileCount;
};
int main(){
    char root[20];
    int userCount;
    printf("Enter the name of dir/file: ");
    scanf("%s", root);
    printf("How many users (for %s): ", root);
    scanf("%d", &userCount);

    struct Directory users[10];
    for(int i=0; i<userCount; i++){
        printf("Enter name of dir/file (under %s: ", i+1,
                                                root);
        scanf("%s", users[i].name);
        printf("How many files (under %s): ",
                                        users[i].name);
        scanf("%d", &users[i].fileCount);

        for(int j=0; j<users[i].fileCount, j++){
            printf("Enter name of file/dir (under %s)
                    :", j+1, users[i].name);
            scanf("%s", users[i].files[j].name);
        }
    }
    printf("\n--- Two-Level Directory Structure ---\n");
    printf("%s\n", root);
```

```
for(int i=0; i<UserCount; i++){
    printf("|\n--> %s\n", users[i].name);
    for(int j=0; j<users[i].fileCount; j++){
        printf("    |\n    --> %s\n", users[i].files[j].name);
    }
}
return 0;
}
```

Sample Output:

Enter the name of dir/file(under null): Hai
How many users(for Hai):1
Enter name of dir/file(under Hai):Hello
How many files(for Hello):1
Enter name of dir/file(under Hello):welcome



Result:

The programs to implement File Organization Structures of both Single Level Directory & Two Level Directory have been done successfully.