

Ex. No.: 12

Date: 24/4/25

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 <conio.h>
#include <string.h>
void main()
{
    int nf=0, i=0, j=0, ch;
    char md[10], f[10][10], name[10];
    clrscr();
    printf("Enter Directory Name: ");
    scanf("%s", md);
    printf("Enter the no of files: ");
    scanf("%d", &nf);
```

```

do
{
    printf("Enter file name to be created.");
    scanf("%s", name);
    for(i=0; i<nf; i++)
    {
        if(!strcmp(name, f[i]))
            break;
        else
            if(i==nf)
            {
                strcpy(fname[j++], name);
                nf++;
            }
            else
                printf("There is already %s\n", name);
    }
    printf("Do you want to enter another file (yes-1 or no-0);");
    scanf("%d", &ch);
}
while(ch==1).
printf("Directory name is: %s\n", md);
printf("File names are: ");
for(i=0; i<j; i++)
    printf("\n%s", f[i]);
getch();
}

```

Output :-

Enter The Directory name: main

Enter the no of files: 2

Enter file name to be created: App

Do you want to enter another file (yes-1 or no-0): 1

Enter file name to be created: Ban

Do you want to enter another file (yes-1 or no-0): 0

Directory name is: main

File names are:

App

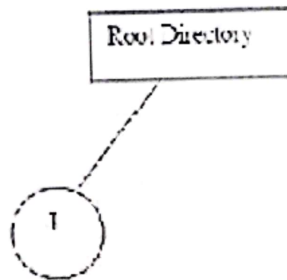
Ban

OUTPUT:

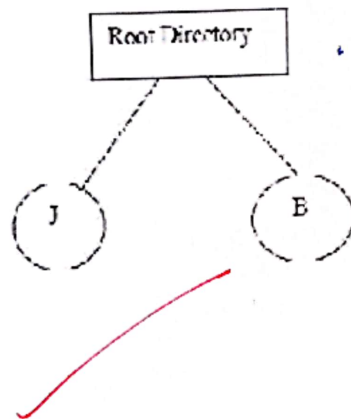
Enter the Number of files

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 <stdlib.h>
#include <string.h>
struct File
{
    char name[100]
    int size;
};
struct SubDir
{
    char name[100];
    struct File files[10];
    int fc;
    int tosize;
};
struct Dir
{
    char name[100];
    struct SubDir subdir[10];
    int sdc;
    int tosize;
};
```

```
void display File SubDir (struct SubDir subDir)
```

```
{  
    printf (" Files: \n");  
    for (int i=0; i < subDir.fc; i++)  
        printf (" %s \n", subDir.files[i].name, subDir.files.size);  
}
```

```
void display Dir (struct Dir dir)
```

```
{  
    printf (" Directory: %s \n", dir.name, dir.tosize);  
    for (int i=0; i < dir.sdc; i++)  
        printf (" SubDirectory: %s \n", dir.subdir[i].name);  
    display File SubDir (dir.subdir[i]);  
}
```

```
int main ()
```

```
{  
    struct Dir directories[2] = {  
        {  
            "Documents", 0, 0, {  
                { "Work", 0, 0, {  
                    { "f1.txt", 5 }, { "f2.docx", 10 }  
                }, 2, 15 }  
            },  
            "Personal", 0, 0, {  
                { "f3.png", 2038 }, { "f4.jpg", 3076 }  
            }, 2, 5120  
        }  
    };
```

```
    for (int i=0; i < 1; i++)
```

```
{  
    for (int j=0; j < dir[i].sdc; j++)  
        dir[i].tosize += dir[i].subdir[j].tosize;
```

```
    for (int i=0; i < 1; i++)
```

```
{  
    display Dir (dir[i]);  
    return 0;
```


Output :-

Documents

Work

f1.txt

f2.docx

Personal

f3.png

f4.jpg

Enter the no of Directories: 1

Enter the name of directory: Documents

Enter the no of subdirectories in 'Documents': 2

Enter the no of files in subdirectory 'Work': 2

Enter file 1 name in subdirectory 'Work': f1.txt

Enter file 2 name in subdirectory 'Work': f2.docx

Enter the name of subdirectory 2 in 'Documents': Personal

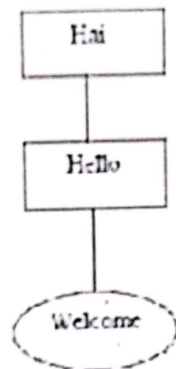
Enter the no of files in subdirectory 'Personal': 2

Enter file 1 name in subdirectory 'Personal': f3.png

Enter file 2 name in subdirectory 'Personal': f4.jpg

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:

Hence the File Organization for Single Level and Two Level Directory is implemented and executed.