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 <stdlib.h>
#include <graphics.h>

int main() {
    int gd = DETECT, gm, count, i, j, mid, dir_x;
    char fname[10][20];
    initgraph(&gd, &gm, "C:\\tc\\bgi");
    cleardevice();
    setbkcolor(Green);
    puts("Enter the number of files");
    scanf("%d", &count);
```

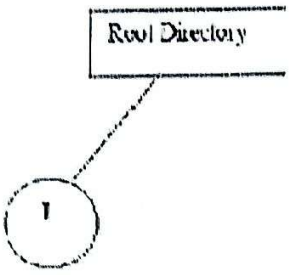
```
for(i=0;i<count;i++){
        cleardevice();
        setbkcolor(CYAN);
        printf("Enter the file %d name",i+1);
        scanf("%s",fname[i]);

        setfillstyle(1,MAGENTA);
        mid=640/count; clr.x=mid/2;
        bar3d(270,100,370,150,0,0);
        settextstyle(2,0,4);
        settextjustify(1,1);

        outtextxy(320,125,"Root directory");
        setcolor(BLUE);
        for(j=0;j<=i;j++,clr.x+=mid){

                line(320,150,clr.x,250);
                fillellipse(clr.x,250,30,30);
                outtextxy(clr.x,250,fname[j]);

        }
}
```

OUTPUT:

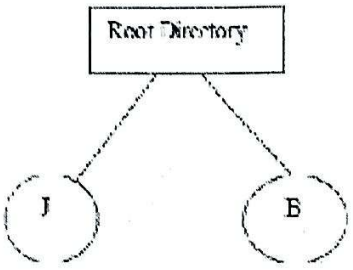
Enter the Number of files

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:

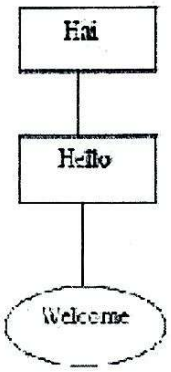
```
#include <stdio.h>
#include <graphics.h>
struct treeelement
{
 char name[20];
  int  x,y, ftype, lx, rx, nc, level; struct tree_element
  *link[5]}; typedef struct tree_element node;
    void main(){
        int  gd= DETECT, gm ; node *root;
         root  =NULL ; clrscr();
         create( root,0,"null",0, 630, 320);
         clrscr();
         initgraph (&gd, &gm, "c:\tc\bgi");
          display (root);
          getch();
          closegraph();
    }
```

```
screate ( node **root, int lev, char *dname, int lx, int rx, int x)
{
    int i, gap;
    if (*root == NULL){
        (*root) = (node *) malloc (sizeof (node));
        printf("enter name of dir/file(under %s):", dname); fflush(stdin);
        gets ((*root) -> name);
        if( lev==0||lev==1)
        (*root) -> ftype =1;
        else
        (*root)-> ftype =2;
        (*root) -> level = lev;
        (*root)-> y = 50+lev* 50;
        (*root)-> x=x;
        (*root) -> lx = lx;
        (*root)-> rx = rx;
        for (i=0; i<5 ; i++)
            (*root) -> link[i] = NULL;
        if((*root) -> ftype ==1)
        {
            if( lev==0 || lev==1)
            {
                if((*root) -> level ==0 )
                printf("How many users");
                else
                printf("How many files");
                printf("(for %s):", (*root)-> name);
                scanf("%d", &(*root)->nc);
            }
            else(*root)->nc = 0;
            if ((*root) -> nc==0)
            gap = rx -lx;
            else
            gap = (rx -lx) / (*root) -> nc;
            for(i=0; i<(*root)->nc; i++)
            screate (&(*root)->link[i], lev+1, (*root)->
            name, lx+ gap* i, lx+ gap *i+ gap, lx+gap *i+ gap/2
```

```
}
else
(*root)->nc=0;
}
}
display(node* root)
{
  int i;
  settextstyle(2,0,4);
  settextjustify(1,1);
  setfillstyle(1,BLUE);
  setcolor(14);
  if(root!=NULL)
  {for(i=0;i<root->nc;i++){
        line(root->x,root->y,root->link[i]->x,root->link[i]->y);
    }
    if(root->ntype==1)bar3d(root->x-20,root->y-10,root->x+20,
    root->y+10,0,0);else
    fillellipse(root->x,root->y,20,20);outtextxy(root->x,root->y,
      root->name);for(i=0;i<root->nc;i++)
       {display(root->link[i]);
    }
    }
  }
```

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:

Thus, the program executed successfully.