OS LAB MANUAL (CS23431)

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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

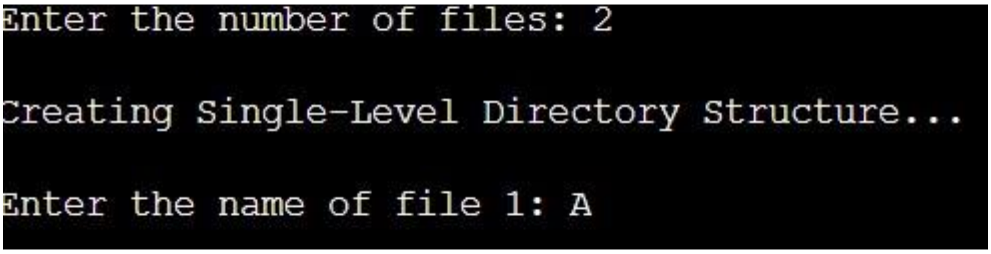
A) Single Level Directory

Program:

```
#include  <stdio.h>
#include <string.h>
int main() {
   int n, i; char files[10][30]; printf("Enter the number of
   files: "); scanf("%d", &n); printf("\nCreating Single-Level
   Directory Structure...\n");
   for (i = 0; i < n; i++) {
      printf("\nEnter the name of file %d: ", i + 1);
      scanf("%s", files[i]); printf("\n+-----------------
      +\n");
      printf("| Root Directory |\n");
      printf("+ ---------------- +\n");
      for (int j = 0; j <= i; j++) {
         printf("       |\n");
```

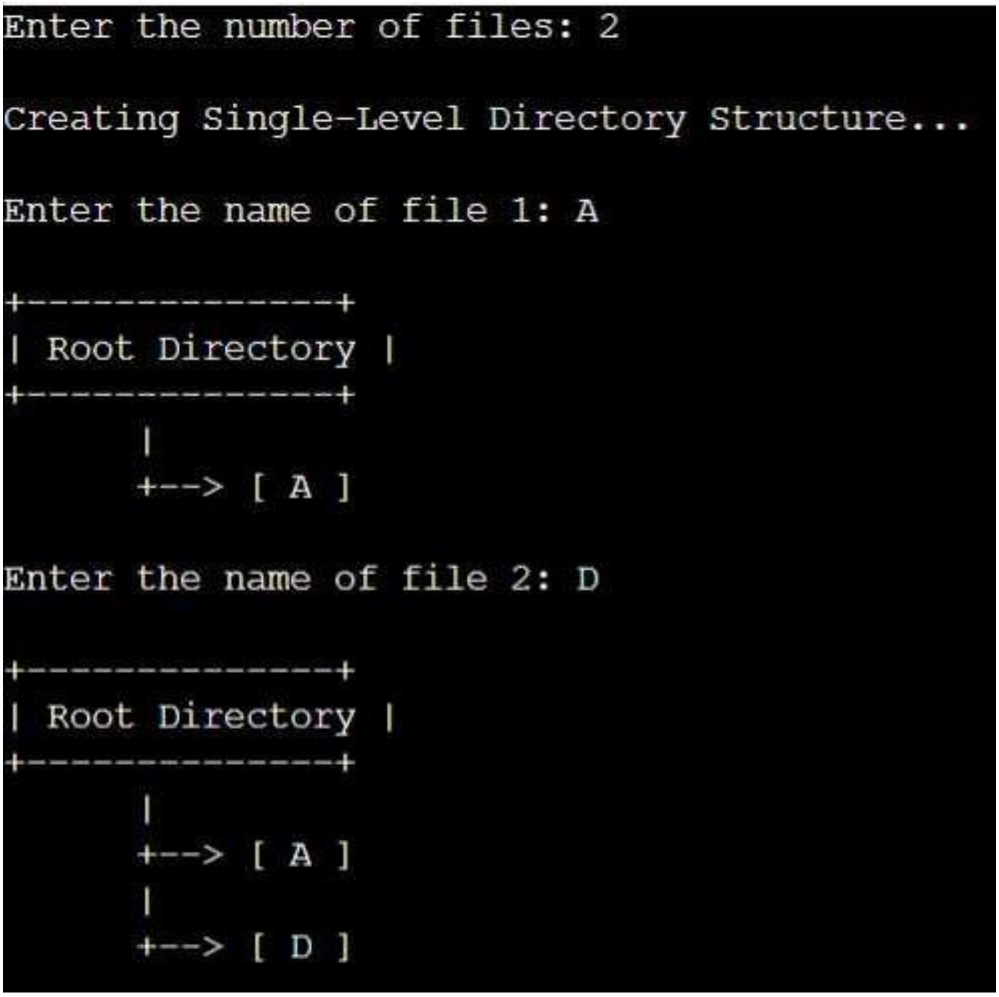
```
            printf("        +--> [ %s ]\n", files[j]);
        }
    }
    return 0;
}
```

Input:



```
Enter the number of files: 2

Creating Single-Level Directory Structure...

Enter the name of file 1: A
```

Output:



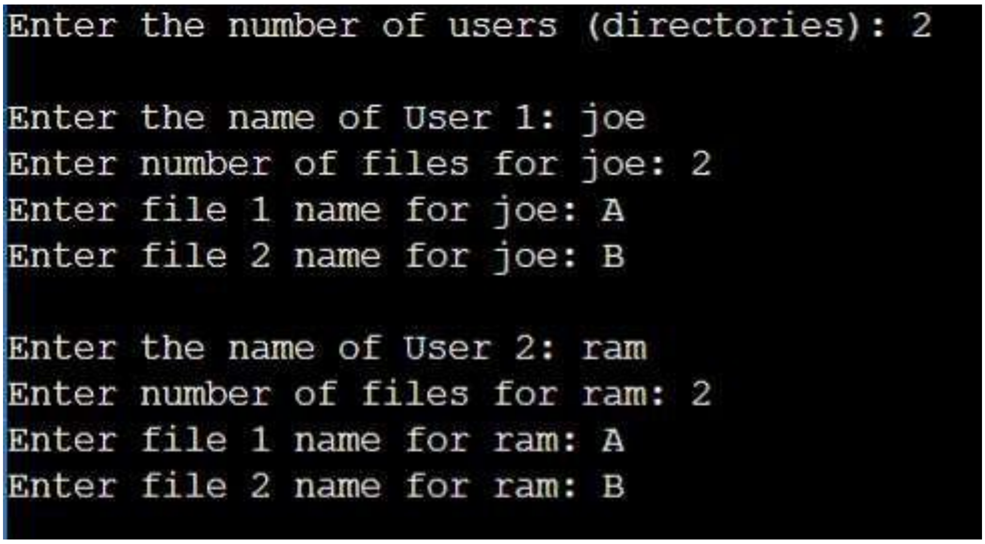
```
Enter the number of files: 2

Creating Single-Level Directory Structure...

Enter the name of file 1: A

+--------------+
| Root Directory |
+--------------+
      |
      +--> [ A ]

Enter the name of file 2: D

+--------------+
| Root Directory |
+--------------+
      |
      +--> [ A ]
      |
      +--> [ D ]
```

B) Two-Level Directory :

Program:

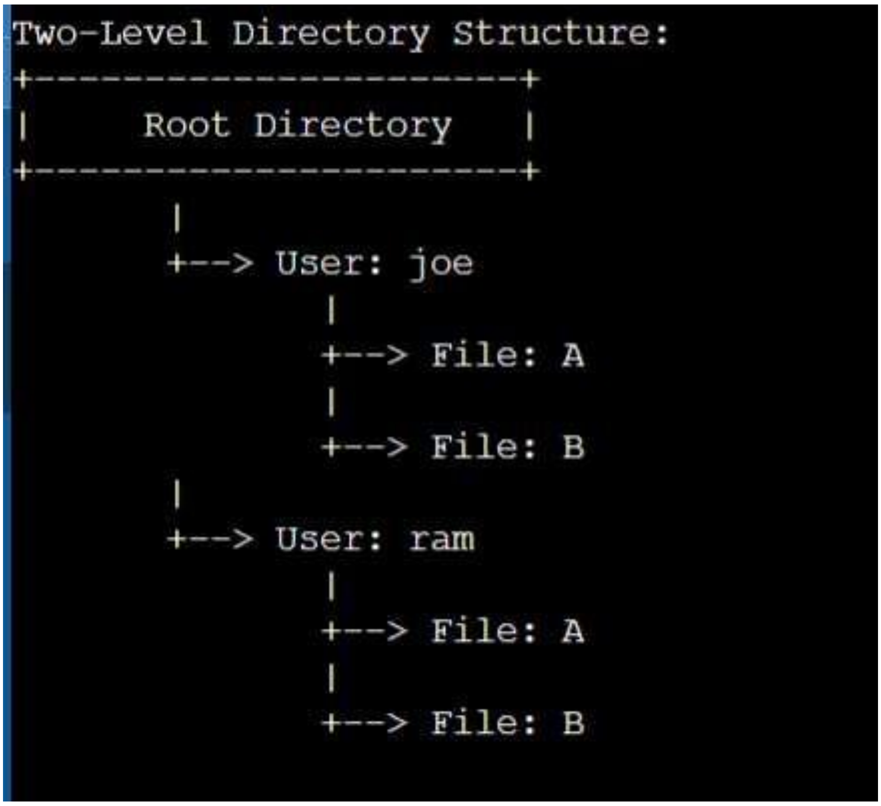
```
#include  <stdio.h>

#include <string.h>

struct  File  {  char

name[30];

};

struct   User   {   char

   name[30];         int

   fileCount;     struct

   File files[10];

};

int main() { int userCount, i, j; struct User users[10];

   printf("Enter the number of users (directories): ");

   scanf("%d", &userCount);

   for (i = 0; i < userCount; i++) { printf("\nEnter the name of User

      %d:  ",  i  +  1);  scanf("%s",  users[i].name);  printf("Enter

      number  of  files  for  %s:  ",  users[i].name);  scanf("%d",

      &users[i].fileCount);  for  (j = 0;  j < users[i].fileCount;  j++) {

      printf("Enter file %d name for %s: ", j + 1, users[i].name);

      scanf("%s", users[i].files[j].name);

      }

   }

   printf("\n\nTwo-Level Directory Structure:\n");

   printf("+ ----------------------------------------+\n");

   printf("|        Root Directory  |\n");

   printf("+ ----------------------------------------      +\n");

   for (i = 0; i < userCount; i++) {

      printf("         |\n"); printf("      +-->       User:

      %s\n", users[i].name);

      for (j = 0; j < users[i].fileCount; j++) {
         printf("            |\n");

         printf("            +--> File: %s\n", users[i].files[j].name);
      }

   }

   return 0;

}
```

Input:



```
Enter the number of users (directories): 2

Enter the name of User 1: joe
Enter number of files for joe: 2
Enter file 1 name for joe: A
Enter file 2 name for joe: B

Enter the name of User 2: ram
Enter number of files for ram: 2
Enter file 1 name for ram: A
Enter file 2 name for ram: B
```

Output:



```
Two-Level Directory Structure:
+----------------------+
|     Root Directory   |
+----------------------+
       |
       +--> User: joe
              |
              +--> File: A
              |
              +--> File: B
       |
       +--> User: ram
              |
              +--> File: A
              |
              +--> File: B
```