Design a C program to organize the file using two level directory structure.

#include <stdio.h>

#include <string.h>

#define MAX\_USERS 10

#define MAX\_FILES 10

struct UserDirectory {

char username[50];

char files[MAX\_FILES][50];

int fileCount;

};

struct UserDirectory users[MAX\_USERS];

int userCount = 0;

int findUser(char name[]) {

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

if (strcmp(users[i].username, name) == 0)

return i;

}

return -1;

}

int findFile(int userIndex, char filename[]) {

for (int i = 0; i < users[userIndex].fileCount; i++) {

if (strcmp(users[userIndex].files[i], filename) == 0)

return i;

}

return -1;

}

void createUser() {

char name[50];

printf("Enter username: ");

scanf("%s", name);

if (findUser(name) != -1) {

printf("User already exists.\n");

} else {

strcpy(users[userCount].username, name);

users[userCount].fileCount = 0;

userCount++;

printf("User created.\n");

}

}

void createFile() {

char uname[50], fname[50];

printf("Enter username: ");

scanf("%s", uname);

int u = findUser(uname);

if (u == -1) {

printf("User not found.\n");

return;

}

printf("Enter filename to create: ");

scanf("%s", fname);

if (findFile(u, fname) != -1) {

printf("File already exists under user.\n");

} else {

strcpy(users[u].files[users[u].fileCount++], fname);

printf("File created.\n");

}

}

void deleteFile() {

char uname[50], fname[50];

printf("Enter username: ");

scanf("%s", uname);

int u = findUser(uname);

if (u == -1) {

printf("User not found.\n");

return;

}

printf("Enter filename to delete: ");

scanf("%s", fname);

int f = findFile(u, fname);

if (f == -1) {

printf("File not found under user.\n");

} else {

for (int i = f; i < users[u].fileCount - 1; i++) {

strcpy(users[u].files[i], users[u].files[i + 1]);

}

users[u].fileCount--;

printf("File deleted.\n");

}

}

void searchFile() {

char uname[50], fname[50];

printf("Enter username: ");

scanf("%s", uname);

int u = findUser(uname);

if (u == -1) {

printf("User not found.\n");

return;

}

printf("Enter filename to search: ");

scanf("%s", fname);

if (findFile(u, fname) != -1) {

printf("File found under user.\n");

} else {

printf("File not found.\n");

}

}

void displayAll() {

if (userCount == 0) {

printf("No users created yet.\n");

return;

}

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

printf("User: %s\n", users[i].username);

if (users[i].fileCount == 0)

printf(" No files.\n");

else

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

printf(" File: %s\n", users[i].files[j]);

}

}

int main() {

int choice;

do {

printf("\n--- Two Level Directory Structure ---\n");

printf("1. Create User\n2. Create File\n3. Delete File\n4. Search File\n5. Display All\n6. Exit\n");

printf("Enter your choice: ");

scanf("%d", &choice);

switch (choice) {

case 1: createUser(); break;

case 2: createFile(); break;

case 3: deleteFile(); break;

case 4: searchFile(); break;

case 5: displayAll(); break;

case 6: printf("Exiting...\n"); break;

default: printf("Invalid choice.\n");

}

} while (choice != 6);

return 0;

}