12. a

CODE –

```c
#include <stdio.h>
#include <string.h>

struct File {
    char name[20];
};

int main() {
    int n, i;
    struct File files[20];

    printf("Enter the Number of files: ");
    scanf("%d", &n);

    for(i = 0; i < n; i++) {
        printf("Enter the file[%d]: ", i + 1);
        scanf("%s", files[i].name);

        // Display root directory structure
        printf("\nRoot Directory\n");
        for(int j = 0; j <= i; j++) {
            printf("    |\n");
            printf("    --> %s\n", files[j].name);
        }
        printf("\n");
    }

    printf("All files in the Single Level Directory:\n");
    for(i = 0; i < n; i++) {
        printf("%s\n", files[i].name);
    }

    return 0;
}
```

OUTPUT –

```
Enter the Number of files: 2
Enter the file[1]: J

Root Directory
    |
    --> J

Enter the file[2]: B

Root Directory
    |
    --> J
    |
    --> B

All files in the Single Level Directory:
J
B
```

12.b

CODE –

```c
#include <stdio.h>
#include <string.h>

struct File {
    char name[30];
};

struct Directory {
    char name[30];
    int file_count;
    struct File files[10];
};

int main() {
    char main_dir[30];
    int user_count;

    printf("Enter the name of dir/file(under null): ");
    scanf("%s", main_dir);

    printf("How many users(for %s): ", main_dir);
    scanf("%d", &user_count);

    struct Directory users[10];

    for (int i = 0; i < user_count; i++) {
        printf("Enter name of dir/file(under %s): ", main_dir);
        scanf("%s", users[i].name);

        printf("How many files(for %s): ", users[i].name);
        scanf("%d", &users[i].file_count);

        for (int j = 0; j < users[i].file_count; j++) {
            printf("Enter name of dir/file(under %s): ", users[i].name);
            scanf("%s", users[i].files[j].name);
        }
    }

    // Display the directory structure
    printf("\nDirectory structure under '%s':\n", main_dir);
    for (int i = 0; i < user_count; i++) {
        printf("\nUser Directory: %s\n", users[i].name);
        for (int j = 0; j < users[i].file_count; j++) {
            printf("  File: %s\n", users[i].files[j].name);
        }
    }

    return 0;
}
```

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

Directory structure under 'Hai':

User Directory: Hello
  File: welcome
```