SSN COLLEGE OF ENGINEERING (Autonomous)

Affiliated to Anna University

DEPARTMENT OF CSE

UCS 1211 PROGRAMMING IN C LABORATORY

Assignment 7

File Handling in C

Reg Number : 185001131

Name : Sai Charan B

Class : CSE - B

1. Write a program which accepts two file names as command line arguments, file1 and file2. Copy the contents of file1 to file2. If file1 already exists copy the contents to file2 otherwise display as no such file. If file2 already exists, ask the user whether to overwrite the existing contents or to append the contents and do accordingly.

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

int main(int argc, char *argv[])
{       char input[10],output[10],ch;
        int a=0;
        strcpy(input,argv[1]);
        strcpy(output,argv[2]);
        FILE *f1,*f2;
```

```
        f1=fopen(input,"r");
        f2=fopen(output,"r");
        if(f1==NULL)
        {       printf("File does not exist\n");
                return(0);
        }
        if(f2!=NULL)
        {       printf("Output file already exists.\n 1. Replace\n2.
Append");
                scanf("%d",&a);
        }
        if(a==1||a==0)
        {
                f2=fopen(output,"w");
        }
        else if(a==2)
        {
                f2=fopen(output,"a");
        }
        ch=getc(f1);
        while(ch!=EOF)
        {       putc(ch,f2);
                ch=getc(f1);
        }
        fclose(f1);
        fclose(f2);
        printf("Successful");
}
```

Output:

cseb131@jtl-29:~$ ./filecopy

Successful

2. Write an interactive C program to maintain a list of names, addresses and telephone numbers. Store the information as records in a file and represent each record as a structure. Perform the following operations:

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

typedef struct
{       char name[30];
        char address[70];
        char contact[11];
}Data;

void AddRecord(FILE * const fp)
{   Data d;

        printf("Enter name: ");
        scanf("%[^\n]*c",d.name);
        getchar();

        printf("Enter address: ");
        scanf("%[^\n]*c",d.address);
        getchar();

        printf("Enter contact: ");
        scanf("%[^\n]*c",d.contact);
        getchar();

        fseek(fp,0,2);
        fprintf(fp,"%s\n%s\n%s\n",d.name,d.address,d.contact);

        printf("Successfully added record!);
}

void ModifyRecord(FILE * fp)
{       fseek(fp,0,0);
        Data d;
        char ch;
        FILE * new = fopen("$emp.txt","w");
        printf("Enter name of person");
        scanf("%[^\n]*c",d.name);
```

```
        getchar();
        printf("Enter address: ");
        scanf("%[^\n]*c",d.address);
        getchar();
        printf("Enter contact: ");
        scanf("%[^\n]*c",d.contact);
        getchar();
        char name[30],address[70],contact[11];
        int isFound = 0;
        do
        {       fscanf(fp,"%[^\n]\n%[^\n]\n%[^\n]\n",name,address,contact);
                fprintf(new,"%s\n",name);
                if( strcmp(name,d.name) == 0)
                {       fprintf(new,"%s\n%s\n",d.address,d.contact);
                        isFound = 1;
                }
                else
                        fprintf(new,"%s\n%s\n",address,contact);
        }while(!feof(fp));

        fclose(new);
        fclose(fp);
        remove("contacts.txt");
        rename("$emp.txt","contacts.txt");

        fp = fopen("contacts.txt","r+");

        if(isFound)
                printf("Succesfully Modified Record!\n");
        else
                printf("Unable to find record!\n");

}

void Display(FILE * const fp)
{       fseek(fp,0,0);
        Data d;
        do
        {  fscanf(fp,"%[^\n]\n%[^\n]\n%[^\n]\n",d.name,d.address,d.contact);
           printf("Name    : %s\n",d.name);
                printf("Address  : %s\n",d.address);
                printf("Contact  : %s\n\n",d.contact);
   }while(!feof(fp));
   fseek(fp,0,0);
}

void Find(FILE * const fp)
{  fseek(fp,0,0);
        Data d;
        char name[30];
   printf("Enter name of person to get details: ");
```

```
        scanf("%[^\n]*c",name);
        getchar();
   int isFound = 0;
   do
   {    fscanf(fp,"%[^\n]\n%[^\n]\n%[^\n]\n",d.name,d.address,d.contact);
                if( strcmp(name,d.name) == 0)
                {       isFound = 1;
                        printf("Name     : %s\n",d.name);
                        printf("Address  : %s\n",d.address);
                        printf("Contact  : %s\n",d.contact);
     }
   }while(!feof(fp) && !isFound);
   if(isFound)
                printf("Successfully found contact!\n");
        else
                printf("Unable to find contact!\n");
}


int main()
{       FILE * fp  = fopen("contacts.txt","r+");

        int opt;

        while(1)
        {       system("clear");
                printf("1 - Add record\n2 - Modify Record\n3 - Display\n4 - Find Record\n5 -
exit\n");
                printf("Enter your option");
                scanf("%d",&opt);
                getchar();
                printf("\n\n");

                switch(opt)
                {       case 1 : AddRecord(fp);
                        break;
                  case 2 : ModifyRecord(fp);
                        break;
                  case 3 : Display(fp);
                        break;
                  case 4 : Find(fp);
                        break;
                  case 5 : fclose(fp);
                        exit(0);
                  default: printf("Invalid Input!\n");
                }
        }
}
```

Output:

cseb131@jtl-29:~$ ./contact

1 - Add record

2 - Modify Record

3 - Display

4 - Find Record

5 - exit

Enter your option1

Enter name: Sai

Enter address: A-2

Enter contact: Ee

Successfully added record!

1 - Add record

2 - Modify Record

3 - Display

4 - Find Record

5 - exit

Enter your option5

3. Modify 2 by using fread and fwrite functions for reading and writing. Perform the following operations

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

typedef struct
{	char name[30];
	char address[70];
	char contact[11];
}Data;

int getIndex()
{	int x = 0;
	do
	{	printf("Enter the record number: ");
		scanf("%d",&x);
		getchar();
      if(x<0)
				printf("Invalid Input!\n");
	}while(x<0);
   return x;
}

Data getData(){
	Data d;
   printf("Enter name: ");
```

```
        scanf("%[^\n]*c",d.name);
        getchar();
        printf("Enter address: ");
        scanf("%[^\n]*c",d.address);
        getchar();
   printf("Enter contact: ");
        scanf("%[^\n]*c",d.contact);
        getchar();
   return d;
}

void AddRecord(const int index)
{       FILE * fp = fopen("contacts.dat","rb+");
        fseek(fp,0,2);
        Data d = getData();
        int num = ftell(fp)/sizeof(Data);
        if(index == -1)
        {   fwrite(&d,1,sizeof(Data),fp);
                fseek(fp,0,0);
      printf("Successfully Added!");
                return;
        }


        if (index > num)
        {       fseek(fp,0,0);
                printf("No such record exists!");
                return;
        }
        fseek(fp,0,0);
        FILE * new = fopen("tmp.dat","wb");
```

```
        Data tmp;
        int i = 0;
        fread(&tmp,1,sizeof(Data),fp);
        i++;
        while(!feof(fp))
        {   if (i == index)
                        fwrite(&d,1,sizeof(Data),new);
    fwrite(&tmp,1,sizeof(Data),new);
        fread(&tmp,1,sizeof(Data),fp);
                i++;
        }
        fclose(fp);
        fclose(new);
        remove("contacts.dat");
        rename("tmp.dat","contacts.dat");
                printf("Successfully Added Record!");
}


void Display(const int index)
{       FILE * fp = fopen("contacts.dat","rb+");
        Data d;
        int i = 0;
        fread(&d,1,sizeof(Data),fp);
        i++;
        while(!feof(fp))
        {       if(index == -1 || i == index)
                {       printf("Name    : %s\n",d.name);
                        printf("Address  : %s\n",d.address);
                        printf("Contact  : %s\n\n",d.contact);
                }
```

```
                fread(&d,1,sizeof(Data),fp);
                i++;
        }
}


void DeleteRecord(const int index)
{       FILE * fp = fopen("contacts.dat","rb");
        fseek(fp,0,2);
        int num = ftell(fp) / sizeof(Data);
        fseek(fp,0,0);
        if (index > num)
        {       printf("No such record exists!");
                return;
        }
        FILE * new = fopen("tmp.dat","wb");
        Data tmp;
        int i = 0;
        fread(&tmp,1,sizeof(Data),fp);
        i++;
   while(!feof(fp))
        {       if(i != index)
                        fwrite(&tmp,1,sizeof(Data),new);
      fread(&tmp,1,sizeof(Data),fp);
                i++;
        }
   fclose(fp);
        fclose(new);
        remove("contacts.dat");
        rename("tmp.dat","contacts.dat");
        printf("Successfully Deleted Record!");
```

```
}
int main()
{   int opt;
   while(1)
        {   system("clear");
                printf("1 - Add record at end\n2 - Add Record at index\n3 - Display Record\n4 - Delete Record\n5 - Display All records\n6 - exit\n");
                printf("Enter your choice: ");
                scanf("%d",&opt);
                getchar();
                printf("\n\n");
      switch(opt)
      {    case 1 : AddRecord(-1);
             break;
                        case 2 : AddRecord(getIndex());
                              break;
                        case 3 : Display(getIndex());
                              break;
                        case 4 : DeleteRecord(getIndex());
                              break;
                        case 5 : Display(-1);
                              break;
                        case 6 : exit(0);

                        default: printf("Invalid Input!");
                }
        }

}
```

Output:

```
cseb131@jtl-29:~$ ./contact2
1 - Add record at end
2 - Add Record at index
3 - Display Record
4 - Delete Record
5 - Display All records
6 - exit
Enter your choice: 4


Enter the record number: 2
Successfully Deleted Record!

1 - Add record at end
2 - Add Record at index
3 - Display Record
4 - Delete Record
5 - Display All records
6 - exit
Enter your choice:6
```