

GROUP 7

Members

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Assignment 2

Source Code

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

#define SIZE_OF_CONTACT_LIST 100

//*****

int substring_search(char pttr[],char str[]){
    int str_len=strlen(str);
    int pttr_len=strlen(pttr);

    for (int i=0;i<=str_len-pttr_len;i++){
        int j=0;
        for(;j<pttr_len;j++)
            if(str[i+j]!=pttr[j])
                break;

        if(j==pttr_len)
            return 1;        // return true
    }
    return 0;                //return false
}

// *****
struct CONTACT {
    char number[13];
    char name[50];
    char email[25];
    char DOB[12];
};
typedef struct CONTACT CONTACT;

CONTACT List[SIZE_OF_CONTACT_LIST];
int last_pos=0;

void add_contact(CONTACT c){
    int pos=last_pos;
    for(int i=0;i<last_pos;i++)
        if(strcasecmp(List[i].name,c.name)>0)
            pos=i;
    for(int i=last_pos;i>pos;i--)
        List[i]=List[i-1];
```

```

    List[pos]=c;
    last_pos++;
}

void delete_contact(int contact_index){
    CONTACT temp = List[contact_index];

    for(int i=contact_index;i<last_pos;i++)
        List[i]=List[i+1];

    last_pos--;
}

void edit_contact(CONTACT edited_contact,int index){
    List[index]=edited_contact;
}

void display_contact(CONTACT C){
    printf("\n-----\n");
    printf("\tName      : %s\n",C.name);
    printf("\tPhone Number : %s\n",C.number);
    printf("\tEmail       : %s\n",C.email);
    printf("\tBirthday    : %s\n",C.DOB);
    printf("-----\n");
}

int search_contact_by_name(char name[]){
    for(int i=0;i<last_pos;i++)
        if( substring_search(name,List[i].name))
            return i;
    return -1;
}

int search_contact_by_number(char number[]){
    for(int i=0;i<last_pos;i++)
        if( strcmp(number,List[i].number)==0)
            return i;
    return -1;
}

void accept_contact_details(CONTACT *c){
    printf("\nEnter name : ");
    scanf(" %[^\\n]s", (c->name));
    printf("Enter phone number : ");
    scanf("%s", (c->number));
    printf("Enter email : ");
    scanf(" %s", (c->email));
    printf("Enter birthday : ");
    scanf(" %s", (c->DOB));
}

//*****

void display_contacts(CONTACT list[],int length){
    printf("\nContact List\n\n");
    for(int i=0;i<length;i++){

```

```

        printf("%d )",i+1);
        display_contact(list[i]);
        printf("\n");
    }
}

//*****

void menu_display(){
    printf("\n1. Add Contact");
    printf("\n2. Delete Contact");
    printf("\n3. Edit Contact");
    printf("\n4. Display Contacts");
    printf("\n5. Search Contact By Name");
    printf("\n6. Search Contact By Number");
    printf("\n0. Exit\n");
    printf("Enter option : ");
}

void menu(){
    int choice=1;

    while(choice){

        menu_display();
        scanf("%d",&choice);

        switch(choice){

            case 1: {
                CONTACT C;
                accept_contact_details(&C);
                add_contact(C);
            }
                break;

            case 2: {
                int index;
                printf("Enter Index : ");
                scanf("%d",&index);
                delete_contact(index-1);
            }
                break;

            case 3: {
                int index;

                printf("Enter Index : ");
                scanf("%d",&index);
                CONTACT C;
                accept_contact_details(&C);

                // display original contact
                printf("\nOriginal Contact : ");
                display_contact(List[index-1]);
            }
        }
    }
}

```

```

        // display edited contact
        printf("\nModified Contact : ");
        display_contact(C);

        char c;
        printf("Save edited contact?(Y/N)? ");
        scanf(" %c",&c);
        if(c=='y' || c=='Y')
            edit_contact(C,index-1);
    }

    break;

case 4: display_contacts(List,last_pos);
    break;

case 5: {
    char name[50];
    printf("Enter Name : ");
    scanf("%s",name);

    int index=search_contact_by_name(name);
    if(index == -1){
        printf("Not Found");
        break;
    }
    printf("%d )",index+1);
    display_contact(List[index]);

}

    break;

case 6: {

    char number[50];
    printf("Enter number : ");
    scanf("%s",number);

    int index=search_contact_by_number(number);
    if(index == -1){
        printf("Not Found");
        break;
    }
    printf("%d )",index+1);
    display_contact(List[index]);

}

    break;

}

}

void init(){
    FILE * f=fopen("contacts.dat","rb");
    if(!f)
        return;
    while(fread(&List[last_pos++],sizeof(CONTACT),1,f));
}

```

```

        last_pos--;
        fclose(f);
    }

    void conl(){
        remove("contacts.dat");
        FILE* f=fopen("contacts.dat","wb");
        fwrite(List,sizeof(CONTACT),last_pos,f);
        fclose(f);
    }

    int main(void) {
        init();
        menu();
        conl();

        return 0;
    }

```

Output

```
Sem_3/Data_Structures/Assignment2 on  master [X!?:]
> ./contacts.o 10:24:14

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 4

Contact List

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 1

Enter name : Alwin Varghese T
Enter phone number : 9923456711
Enter email : alwinvt@mail.com
Enter birthday : 31/07/2002

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 4

Contact List

1 )
-----
      Name      : Alwin Varghese T
      Phone Number : 9923456711
      Email      : alwinvt@mail.com
      Birthday    : 31/07/2002
-----

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 1

Enter name : Akshai M K
Enter phone number : 8711909022
Enter email : akshaimk@mail.com
Enter birthday : 14/08/2002

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 4

Contact List

1 )
-----
      Name      : Akshai M K
      Phone Number : 8711909022
      Email      : akshaimk@mail.com
      Birthday    : 14/08/2002
-----

2 )
-----
      Name      : Alwin Varghese T
      Phone Number : 9923456711
```

```

Email      : alwint@mail.com
Birthday   : 31/07/2002
-----

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 1

Enter name : Amal Joshry
Enter phone number : 7543221189
Enter email : amaljoshy@mail.com
Enter birthday : 27/11/2002

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 4

Contact List

1 )
-----
Name      : Akshai M K
Phone Number : 8711909022
Email     : akshaimk@mail.com
Birthday  : 14/08/2002
-----

2 )
-----
Name      : Alwin Varghese T
Phone Number : 9923456711
Email     : alwint@mail.com
Birthday  : 31/07/2002
-----

3 )
-----
Name      : Amal Joshry
Phone Number : 7543221189
Email     : amaljoshy@mail.com
Birthday  : 27/11/2002
-----

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 3
Enter Index : 3

Enter name : Amal Joshry
Enter phone number : 7543221189
Enter email : amaljoshy@mail.com
Enter birthday : 27/11/2002

Original Contact :
-----
Name      : Amal Joshry
Phone Number : 7543221189
Email     : amaljoshy@mail.com
Birthday  : 27/11/2002
-----

Modified Contact :
-----
Name      : Amal Joshry
Phone Number : 7543221189
Email     : amaljoshy@mail.com
Birthday  : 27/11/2002
-----

Save edited contact?(Y/N)? Y

```

```

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 4

Contact List

1 )
-----
Name       : Akshai M K
Phone Number : 8711909022
Email      : akshaimk@mail.com
Birthday   : 14/08/2002
-----

2 )
-----
Name       : Alwin Varghese T
Phone Number : 9923456711
Email      : alwinvt@mail.com
Birthday   : 31/07/2002
-----

3 )
-----
Name       : Amal Joshy
Phone Number : 7543221189
Email      : amaljoshy@mail.com
Birthday   : 27/11/2002
-----

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 1

Enter name : Alfred Jophy
Enter phone number : 7559079855
Enter email : alfredjophy@mail.com
Enter birthday : 12/09/2002

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 4

Contact List

1 )
-----
Name       : Akshai M K
Phone Number : 8711909022
Email      : akshaimk@mail.com
Birthday   : 14/08/2002
-----

2 )
-----
Name       : Alwin Varghese T
Phone Number : 9923456711
Email      : alwinvt@mail.com
Birthday   : 31/07/2002
-----

3 )
-----
Name       : Alfred Jophy
Phone Number : 7559079855
Email      : alfredjophy@mail.com
Birthday   : 12/09/2002
-----

```



```

4 )
-----
Name       : Amal Joshy
Phone Number : 7543221189
Email      : amaljoshy@mail.com
Birthday   : 27/11/2002
-----

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 2
Enter Index : 3

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 4

Contact List

1 )
-----
Name       : Akshai M K
Phone Number : 8711909022
Email      : akshaimk@mail.com
Birthday   : 14/08/2002
-----

2 )
-----
Name       : Alwin Varghese T
Phone Number : 9923456711
Email      : alwinvt@mail.com
Birthday   : 31/07/2002
-----

3 )
-----
Name       : Amal Joshy
Phone Number : 7543221189
Email      : amaljoshy@mail.com
Birthday   : 27/11/2002
-----

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 1

Enter name : Alfred Jophy
Enter phone number : 7559079855
Enter email : alfredjophy@mail.com
Enter birthday : 12/09/2002

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 4

Contact List

1 )
-----
Name       : Akshai M K
Phone Number : 8711909022
Email      : akshaimk@mail.com
Birthday   : 14/08/2002
-----

```

```

-----
2 )
-----
Name       : Alwin Varghese T
Phone Number : 9923456711
Email      : alwintv@mail.com
Birthday   : 31/07/2002
-----

3 )
-----
Name       : Alfred Jophy
Phone Number : 7559079855
Email      : alfredjophy@mail.com
Birthday   : 12/09/2002
-----

4 )
-----
Name       : Amal Joshy
Phone Number : 7543221189
Email      : amaljoshy@mail.com
Birthday   : 27/11/2002
-----

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 5
Enter Name : Al
2 )
-----
Name       : Alwin Varghese T
Phone Number : 9923456711
Email      : alwintv@mail.com
Birthday   : 31/07/2002
-----

```

```


1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 5
Enter Name : Alf
3 )
-----
Name       : Alfred Jophy
Phone Number : 7559079855
Email      : alfredjophy@mail.com
Birthday   : 12/09/2002
-----

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 6
Enter number : 7559079855
3 )
-----
Name       : Alfred Jophy
Phone Number : 7559079855
Email      : alfredjophy@mail.com
Birthday   : 12/09/2002
-----

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 0

```

```

Sem_3/Data_Structures/Assignment2 on  master [!?] took 7m46s
> ./contacts.o
10:32:02

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 4


Contact List

1 )
-----
Name       : Akshai M K
Phone Number : 8711909022
Email      : akshaimk@mail.com
Birthday   : 14/08/2002
-----

2 )
-----
Name       : Alwin Varghese T
Phone Number : 9923456711
Email      : alwinvt@mail.com
Birthday   : 31/07/2002
-----

3 )
-----
Name       : Alfred Jophy
Phone Number : 7559079855
Email      : alfredjophy@mail.com
Birthday   : 12/09/2002
-----

4 )
-----
Name       : Amal Joshy
Phone Number : 7543221189
Email      : amaljoshy@mail.com
Birthday   : 27/11/2002
-----

1. Add Contact
2. Delete Contact
3. Edit Contact
4. Display Contacts
5. Search Contact By Name
6. Search Contact By Number
0. Exit
Enter option : 0
Sem_3/Data_Structures/Assignment2 on  master [!?] took 4s
>
10:32:10

```