KIET Group of Institutions, Ghaziabad

COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

PROJECT BASED LEARNING

on

PHONEBOOK MANAGEMENT SYSTEM

SUBJECT: DATA STRUCTURES USING C LAB

(KCS-301)

Submitted By:

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Aim: To make a phonebook management system

Objective: To use to doubly linked list, heap and tree data structures to achieve the aim.

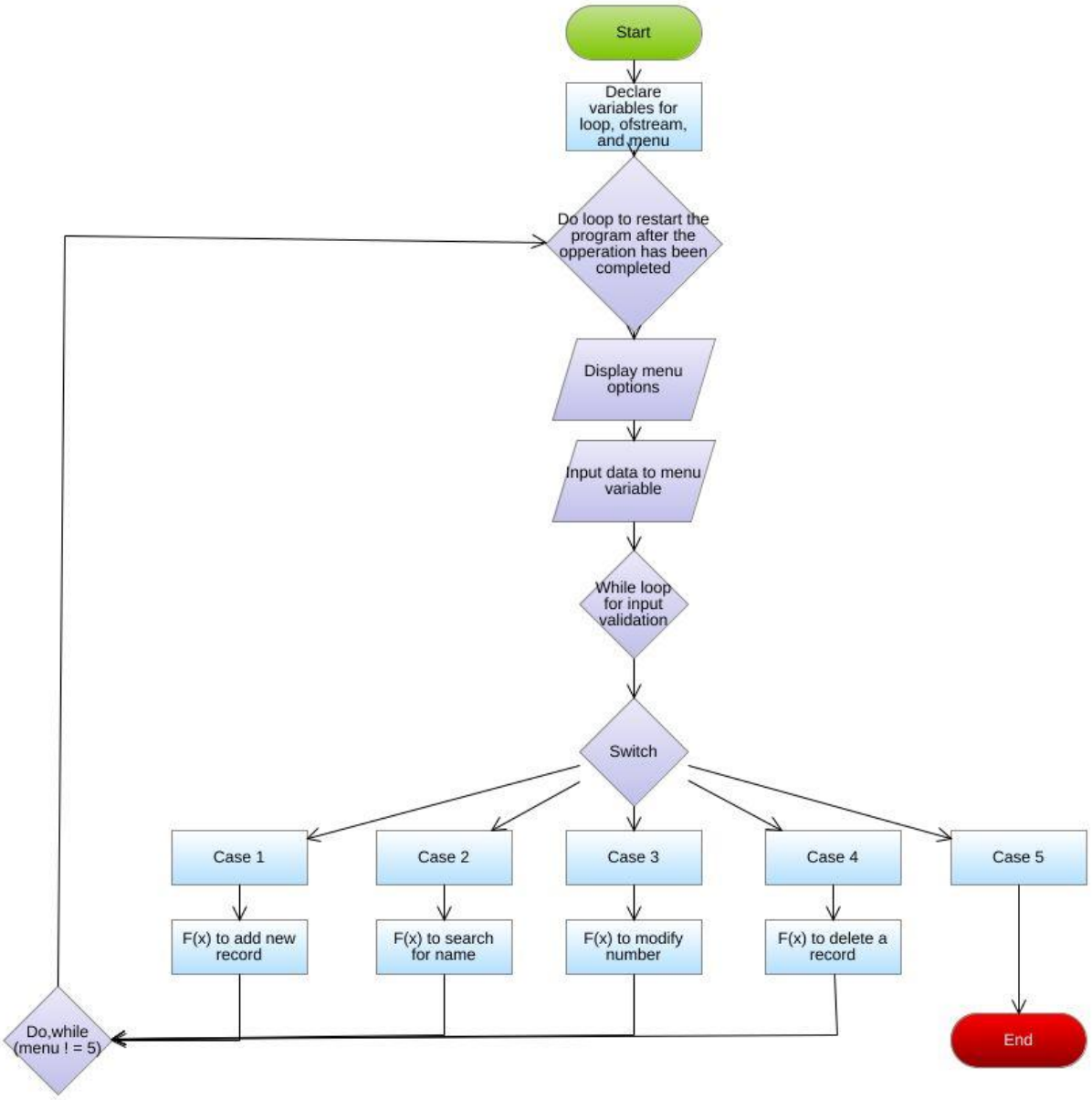
Abstract: The primary features that make up the main menu of this Phonebook program include adding new records, listing them, altering and updating them, searching for stored contacts, and deleting phonebook data.

When adding a record to the Phonebook, personal information such as name, gender, father's name, phone number, citizenship number, email, and address is requested. Modifying, listing, searching for, and removing these records is then possible.

Basic principle: The file handling method and data structure are utilized for storing data and performing the basic phonebook operations in this application.

Methodology: To use data structure to store phonebook data and display data.

Flowchart:



CODING IMPLEMENTATION:

```c
#include <stdio.h>
#include <conio.h>
#include <string.h>
#include <stdlib.h>
#include <windows.h>
struct phonebook
{
    char fullname[35];
    char add[50];
    char f_name[35];
    char m_name[30];
    long int contact_no;
    char gender[8];
    char email_add[100];
    char postal_code[20];
};
void menu();
void gt();
void strt();
void bck();
void add_info();
void list_info();
void update_info();
void delete_info();
void search_info();
int main()
{
    system("color 5f");
    strt();
    return 0;
}
void bck()
{
    strt();
}
void strt()
{
```

```
38      menu();
39  }
40  void menu()
41  {
42      system("cls");
43      printf("\t\t*********WELCOME TO PHONEBOOK***********");
44
45      printf("\n\n\t\t\t  MENU\t\t\n\n");
46      printf("\t1.Add New   \t2.List   \t3.Exit  \n\t4.Modify \t5.Search\t6.Delete\t\n\n");
47      printf("\n\t Please Enter the Number you Want to Choose: ");
48      switch (getch())
49      {
50      case '1':
51
52          add_info();
53          break;
54      case '2':
55          list_info();
56          break;
57      case '3':
58          exit(0);
59          break;
60      case '4':
61          update_info();
62          break;
63      case '5':
64          search_info();
65          break;
66      case '6':
67          delete_info();
68          break;
69      default:
70          system("cls");
71          printf("\nEnter 1 to 6 only");
72          printf("\n Enter any key");
73          getch();
74
```

```
75          menu();
76      }
77  }
78  void add_info()
79  {
80      system("cls");
81      FILE *files;
82      struct phonebook x;
83      files = fopen("project", "ab+");
84      printf("\n Enter the Name: ");
85      gt(x.fullname);
86      printf("\nEnter the Address: ");
87      gt(x.add);
88      printf("\nEnter Father's Name: ");
89      gt(x.f_name);
90      printf("\nEnter Mother's Name: ");
91      gt(x.m_name);
92      printf("\nEnter Contact Number: ");
93      scanf("%ld", &x.contact_no);
94      printf("Enter Gender: ");
95      gt(x.gender);
96      printf("\nEnter Email Address: ");
97      gt(x.email_add);
98      printf("\nEnter Postal Code: ");
99      gt(x.postal_code);
100     fwrite(&x, sizeof(x), 1, files);
101
102     fflush(stdin);
103     printf("\nNew Record Has Been Successfully Saved ");
104
105     fclose(files);
106
107     printf("\n\nEnter any key");
108
109     getch();
110     system("cls");
111     menu();
```

```c
}
void list_info()
{
    struct phonebook x;
    FILE *files;
    files = fopen("project", "rb");
    if (files == NULL)
    {
        printf("\nfile opening error in listing :");

        exit(1);
    }
    while (fread(&x, sizeof(x), 1, files) == 1)
    {
        printf("\n\n\n YOUR RECORD INFORMATION IS\n\n ");
        printf("\nName=%s\nAdress=%s\nFather name=%s\nMother name=%s\nMobile no=%ld\nSex=%s\nE-mail=%s\nCitizen no=%s", x.fullname, x.add, x.f_name, x.m_name, x
        contact_no, x.gender, x.email_add, x.postal_code);

        getch();
        system("cls");
    }
    fclose(files);
    printf("\n Enter any key");
    getch();
    system("cls");
    menu();
}
void search_info()
{
    struct phonebook x;
    FILE *files;
    char name[100];

    files = fopen("project", "rb");
    if (files == NULL)
    {
        printf("\n error in opening\a\a\a\a");
```

```c
        exit(1);
    }
    printf("\nEnter the Name of Person you want to Search\n");
    gt(name);
    while (fread(&x, sizeof(x), 1, files) == 1)
    {
        if (strcmp(x.fullname, name) == 0)
        {
            printf("\n\tDetail Information About %s", name);
            printf("\nName:%s\naddress:%s\nFather name:%s\nMother name:%s\nMobile no:%ld\nsex:%s\nE-mail:%s\nCitision no:%s", x.fullname, x.add, x.f_name, x.m_name, x.
            contact_no, x.gender, x.email_add, x.postal_code);
        }
        else
            printf("file not found");
    }
    fclose(files);
    printf("\n Enter any key");

    getch();
    system("cls");
    menu();
}
void delete_info()
{
    struct phonebook x;
    FILE *files, *file_temp;
    int fl;
    char name[100];
    files = fopen("project", "rb");
    if (files == NULL)
    {

        printf("CONTACT'S DATA NOT ADDED YET.");
    }
    else
    {
        file_temp = fopen("temp", "wb+");
```

```
184         if (file_temp == NULL)
185 
186             printf("file opaning error");
187         else
188 
189         {
190 
191             printf("Enter CONTACT'S NAME:");
192             gt(name);
193 
194             fflush(stdin);
195             while (fread(&x, sizeof(x), 1, files) == 1)
196             {
197                 if (strcmp(x.fullname, name) != 0)
198                     fwrite(&x, sizeof(x), 1, file_temp);
199                 if (strcmp(x.fullname, name) == 0)
200                     fl = 1;
201             }
202             fclose(files);
203             fclose(file_temp);
204             if (fl != 1)
205             {
206                 printf("NO CONACT'S RECORD TO DELETE.");
207                 remove("temp.txt");
208             }
209             else
210             {
211                 remove("project");
212                 rename("temp.txt", "project");
213                 printf("\nRECORD DELETED SUCCESSFULLY.");
214             }
215         }
216     }
217     printf("\n Enter any key");
218 
219     getch();
220     system("cls");
```

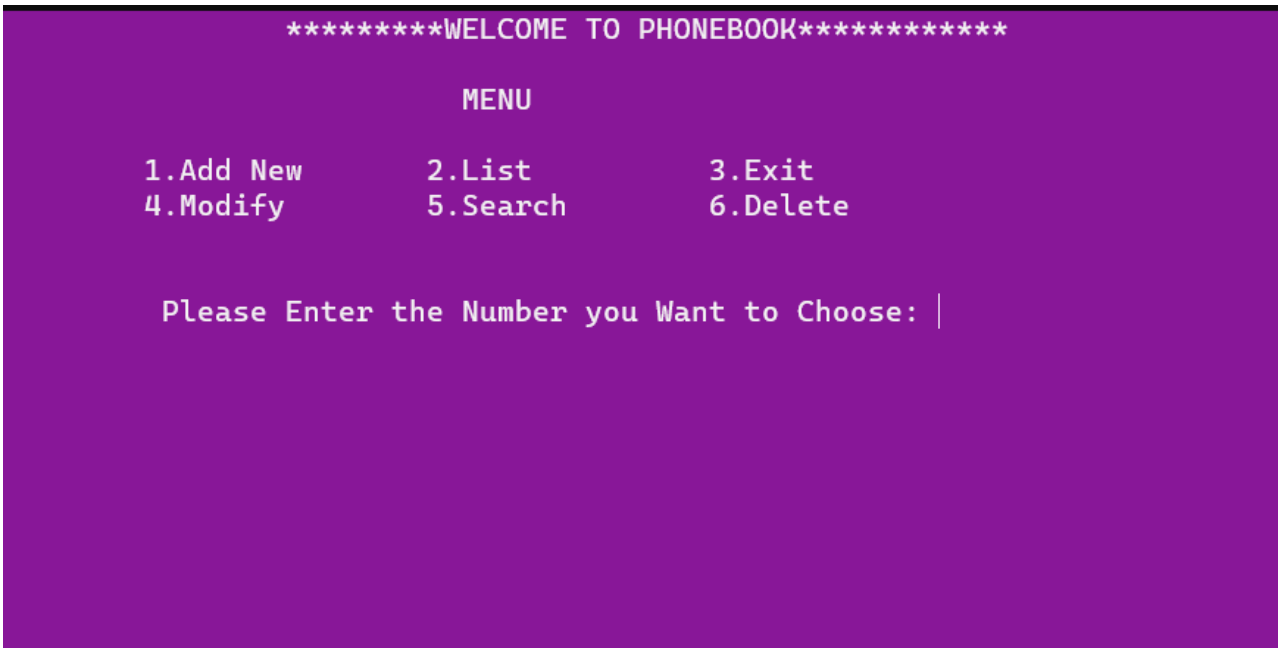
```
221     menu();
222 }
223
224 void update_info()
225 {
226     int b;
227     FILE *files;
228     int fl = 0;
229     struct phonebook x, y;
230     char name[50];
231     files = fopen("project", "rb+");
232     if (files == NULL)
233     {
234
235         printf("CONTACT'S DATA NOT ADDED YET.");
236         exit(1);
237     }
238     else
239     {
240         system("cls");
241         printf("\nEnter CONTACT'S NAME TO MODIFY:\n");
242         gt(name);
243         while (fread(&x, sizeof(x), 1, files) == 1)
244         {
245             if (strcmp(name, x.fullname) == 0)
246             {
247
248                 printf("\n Enter Name:");
249                 gt(y.fullname);
250                 printf("\nEnter the Address:");
251                 gt(y.add);
252                 printf("\nEnter Father Name:");
253                 gt(y.f_name);
254                 printf("\nEnter Mother Name:");
255                 gt(y.m_name);
256                 printf("\nEnter Contact Number:");
257                 scanf("%ld", &y.contact_no);
```

```
                printf("\nEnter Gender:");
                gt(y.gender);
                printf("\nEnter Email Address:");
                gt(y.email_add);
                printf("\nEnter Postal Code\n");
                gt(y.postal_code);
                fseek(files, -sizeof(x), SEEK_CUR);
                fwrite(&y, sizeof(x), 1, files);
                fl = 1;
                break;
            }
            fflush(stdin);
        }
        if (fl == 1)
        {
            printf("\n your data id modified");
        }
        else
        {
            printf(" \n data is not found");
        }
        fclose(files);
    }
    printf("\n Enter any key");
    getch();
    system("cls");
    menu();
}
void gt(char *name)
{

    int l = 0, k;
    char o, cha;
    do
    {
        o = getch();
        if (o != 8 && o != 13)
```

```
293         o = getch();
294         if (o != 8 && o != 13)
295         {
296             *(name + l) = o;
297             putch(o);
298             l++;
299         }
300         if (o == 8)
301         {
302             if (l > 0)
303             {
304                 l--;
305             }
306             // printf("h");
307             system("cls");
308             for (k = 0; k < l; k++)
309             {
310                 cha = *(name + k);
311                 putch(cha);
312             }
313         }
314     } while (o != 13);
315     *(name + l) = '\0';
316 }
```

RESULT / OUTPUT



```
 Enter Name: ABC
Enter the Address: KIET
Enter Father Name: ABC
Enter Mother Name: ABC
Enter Contact Number.:77777777777
Enter Gender:MALE
Enter Email Address:sdhbc@gmail.com
Enter Postal Code:5654535
New Record Has Been Successfully Saved

Enter any key
```

```
                *********WELCOME TO PHONEBOOK************

                           MENU

        1.Add New       2.List          3.Exit
        4.Modify        5.Search        6.Delete


         Please Enter the Number you Want to Choose:


 YOUR RECORD INFORMATION IS


Name=ABC
Adress=KIET
Father name=ABC
Mother name=ABC
Mobile no=388697201
Sex=Male
E-mail=cjdbh@gmail.com
Citizen no=654566
```

```
               *********WELCOME TO PHONEBOOK************

                          MENU

       1.Add New       2.List          3.Exit
       4.Modify        5.Search        6.Delete


        Please Enter the Number you Want to Choose: Enter CONTACT'S NAME:ABC
RECORD DELETED SUCCESSFULLY.
 Enter any key
```

TIME COMPLEXITY: O(n)