Data Structures and Algorithms Assignment

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BITS Pilani

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INTRODUCTION

The given assignment has been performed in the coding language C++ and the compiler used is Turbo C++.

The project has a class manager which has several member functions.

The methods that have been used in this project are :

1. Binary Search
2. File Handling
3. Concept of Classes and Objects
4. Inheritance

The project has several member functions like:

Void enter() - This function is used to take input for all data members for a contact from the user .

Void modify() - This function is used to take input from the user for an already existing contact and replace them with the newly entered values for the data member.

Void display() - This function displays all the values entered in the data members existing in the file.

Void create() - This function is used in order to store the data inputs given by the user.

Void delete () - This function can be used to delete a certain data entry entered by the user, offered as an option.

Void edit () - This function is used to edit any data entered i.e. if the user wants to change any of the particulars entered before. It incorporates Binary Search in order to first search for the entry to be edited and then gives an option to edit the data entered.

Void search() functions - This is a group of functions including searchname(), searchmobile(), searchcity(), searchcountry(), searchemail(), searchmno(). These methods allow the user to search about a data member by using anything like their name,mobile number,city, country or email.

The class also has separate functions to return values of the data members of the class so that they can be used by the functions which are not in the scope of the class.

ABOUT

This project enables users to easily store and find contact information, such as names, addresses and telephone numbers.

It has practical uses like saving contacts in phone directories, member information in hotels and clubs etc.

When one enters the program, they are first encountered with three choices names Admin, Search and Quit.

Using Admin, they will first have to enter the password and then they will be able to access all the Administrator functions of the program. After entering the correct password, one gets options to Add a contact, Remove a contact, Edit a contact, Show all contacts list, Change the administrator password or one can quit to the main menu. Moving Ahead with any of the options, one will have to complete it, for example, Selecting Add contact, the user would have to enter all the details of a contact; Selecting Remove contact, the user can remove any of the existing contacts on the file using their member number; Selecting Edit contact, one can edit any data entered i.e. if the user wants to change any of the particulars entered before; Selecting Show all contacts, one can see all the existing contacts on the file; Selecting change password, the user will first have to fill the old password and then type in the new password will be changed if the credentials match and at the last, the user will get back to the previous menu if they quit.

Going forward with the Search option, one can search about an existing contact through any if the data members available like their name,mobile number,city, country or email.

And always the user has an option to quit and get out of the program

ALGORITHM

The method modify():

cout<<”Input for the USER”<<endl

gets(INPUT);

The method Searchmno:

Int Searchmno (int x)

{

Beginning = 0;

End = n-1;

Res = -1

While (beg<= end):

Mid = (beg+end)/2

If A[mid]<=x

beg=mid+1

Res = mid

Else:

End = mid-1

Return res

}

Method display():

Includes file handling,

```
 fstream f1;
 manager m1;
 char ch;
 f1.open("MANAGER.DAT",ios::binary|ios::app);
 m1.Enter();
 if(Searchmno(m1.getMno())==0)
 {
   f1.write((char*)&m1,sizeof(m1));
   cout<<"Contact added!! ";
 }
```

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