Assignment Report

Logic and workflow

The program is made using two classes. One class is to ensure users details are stored into the pointers:
Ptrusername (name), ptrname (identifier), ptremail (email) and ptrpassword (password). Each store their respective variables having a size of 20 elements as default constructor initialized. These arrays resize according to how many new elements are added, considering the capacity of users (counting variable which is incremented everytime the data is set and stored) is greater than the capacity of the pointers. The arrays resize when more elements are added and\or when elements are deleted, which also resizes the counting variable (that is, the number of users existing within the system when running).
Furthermore, the system ensures that the user's identifier is unique and the password fits all the vital criteria. If either of the cases fails, the login prompts the user to sign up again. Upon signing up, the system calls another prompt upon which the user can either sign up again using different credentials or login. At sign up, the password is stored in the array using encryption function that uses caesar cipher method using key 2. That is, "omer" encryption is "qovt," and its decryption is the absence of key two, which makes it "omer" again if the system is asked to display the user credentials.

The other class is now called when the user selects login prompt. This class is an inner class friend function of the class Users. This class is called LoginAuthentication. This class is a friend class in the Users to access the private member and member functions. The login has two aspects: the predefined admin access and user access. The user access is defined by prompting a user with login form upon which the user enters their username (identifier) and password. If the username exists, the system checks if the corresponding index at which the username is stored has the password that matches the password entered. If true, it logs in; if false, it prompts the user to enter the password again. The user now has its menu. Similarly, admin has its menu. Admin can delete, add, change their credentials.

The system ends if the user selects "unsubscribe" or logs out. The system also ends when the Admin logs out.

Assumptions

- The admin knows their username (Admin) and password (admin) and will not get it wrong; therefore, the admin access is predefined and will login if the admin knows their credentials.
- The Admin had already signed up before the system was created. Therefore, no admin will sign up. The person will only login.

- Class Users is just one Database and is not an individual database, so the User object is only called once.
- The above logic leads to another assumption that the the system has a large memory on static and that the users in the database will not exceed the memory of static while its live.

Constraints

- The system does not use dynamic arrays for storing deleting users because it fails to work. Therefore, the predefined size of the array is 100.