HACETTEPE UNIVERSITY

COMPUTER ENGINEERING DEPARTMENT

BBM365 2022 FALL

Assignment-2

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Problem

In this project, we are expected to develop a simple message box system.The system stores and protect the messages left by visitors.Visitors will leave messages to the registered users.Registered users can see the messages by using message codename,message password and their username and password.A user cannot see other user's messages.The user must know the message codename and password.

Important Notes About the Assignment

- We used JAVA 14 version. Our program works as specified on this version.
- Detailed description of all functions given in the code.
- We have 4 preregistered users in the system. Users username and password informations given in the table below.
- There is no user registiration system in the program.

Usernames	Passwords
freya	fourdoor65
thor	siskoadam13
odin	sinsitanri14
kratos	adamgibiadam

Solution for the Problem

We have 5 java classes in this project:

- User class creates instances for registered users with attributes username and password.
- Message class create instances for each message which is left by visitors.
- Page class includes implementations of GUI.
- Util class has different methods, which are IO operations, encryption-decryption and some split operations.

Figure 1 UML Diagram

Program uses 2 txt file to store data. *messages.txt* stores messages left by visitors and *users.txt* stores users informations. Format of these files:

messages.txt
username1 - message_code1 - message_password1 - message1
username2 - message_code2 - message_password2 - message2
…

users.txt
username1 - user_password1
username2 - user_password2
…

message_passwords and user_passwords stored in hashed form. Also message stored as encrypted. Hashed values and encrypted message encoded as **Base64** to be able to written into txt file.

We preferred to use **MD5** Hash Algorithm to store passwords safely. We used **DES** Algorithm with **ECB** encryption mode to store messages as encrypted.

We used **Java Swing** for the GUI. There are 4 different pages. These are *Home page, Message View page, Register page* and *View page.*

Home Page

Home page is the main page of the program. There are two buttons to direct a user to the access page to view a message and the register page to leave a message to the system.

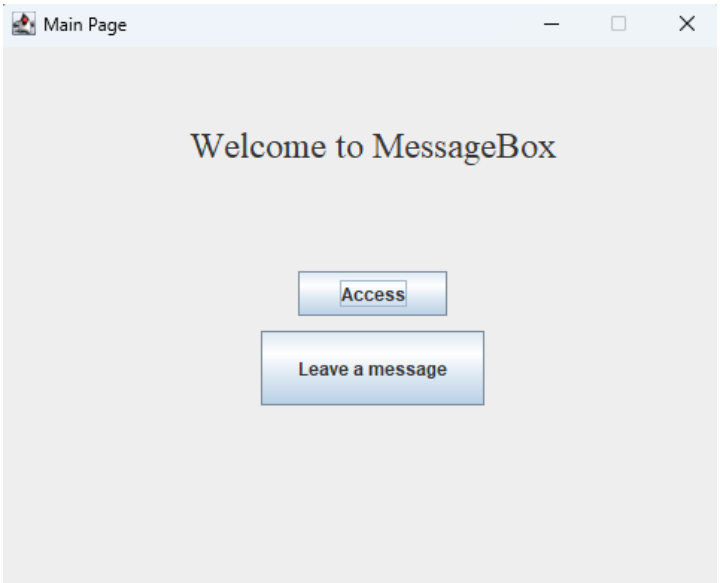

Figure 2 Home page view

Message Register Page

To create new messages, there is a message register view that includes a registration form. This form include corresponding fields for message content, message id, and password. Also include the authorized username. On the form page, there are two buttons, one for sending the form to create a new message, and the other one to return to the home page.

There are some constraints. Fields cannot be left empty. Message passwords must be at least 8 characters. 2 password field should be matched. Otherwise there will be printed a red error message left bottom of the page. If all conditions are satisfied message will be created with a green information message printed left bottom of the page.

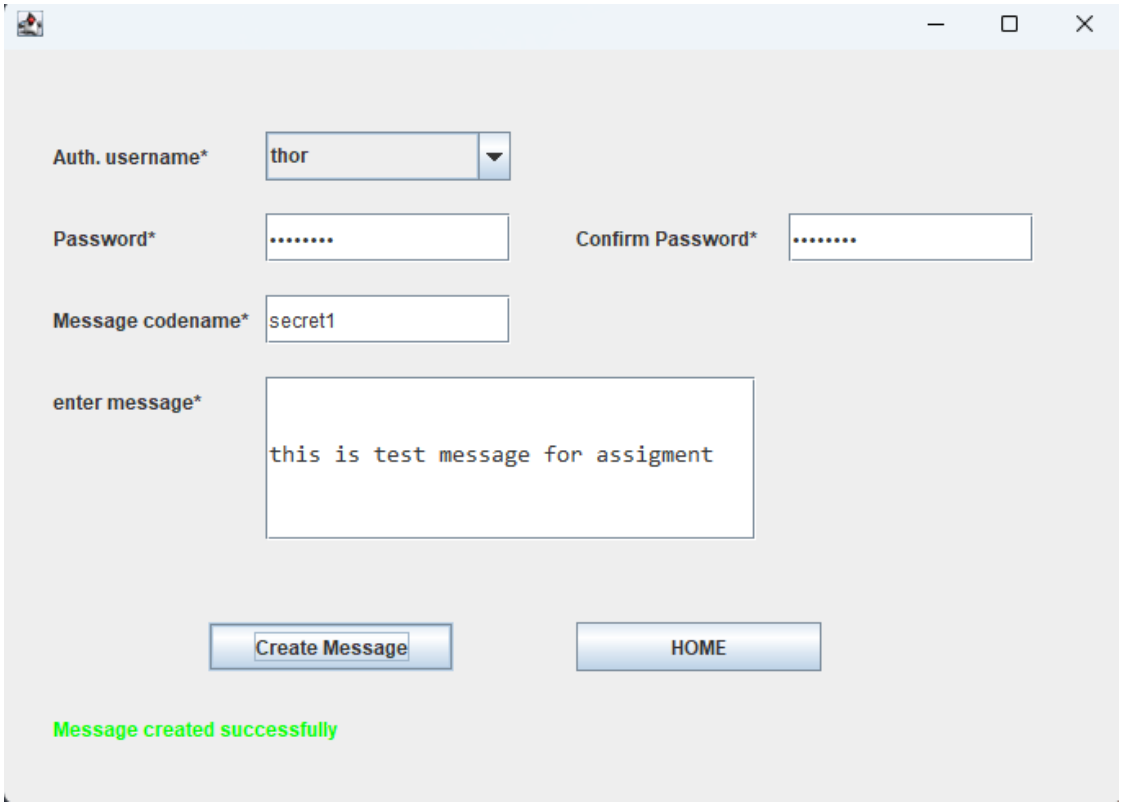

Figure 3 Message Register View

Access View Page

This page includes a form to get the credentials from the user. There are 4 fields: message id and password, username, and user password. The page include a ”View” button. If the given credentials are correct and the user has authorization, s/he access the message. There is “Home” button to return to the home page and a “Reset” button to clear all fields.

Message View Page

After the access page, user directed to the message page, which includes message. The message should be on the frame, and there should be a button to return.

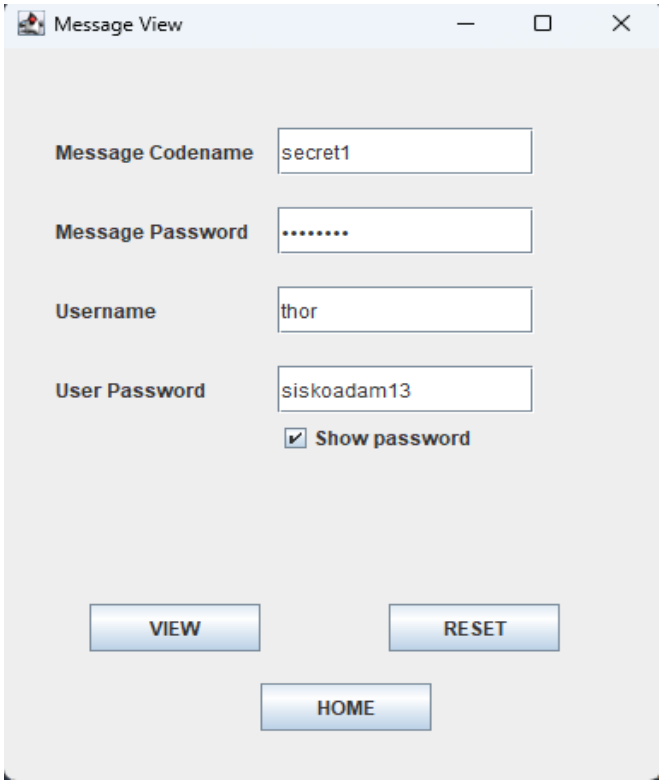

Figure 4 Access Page View

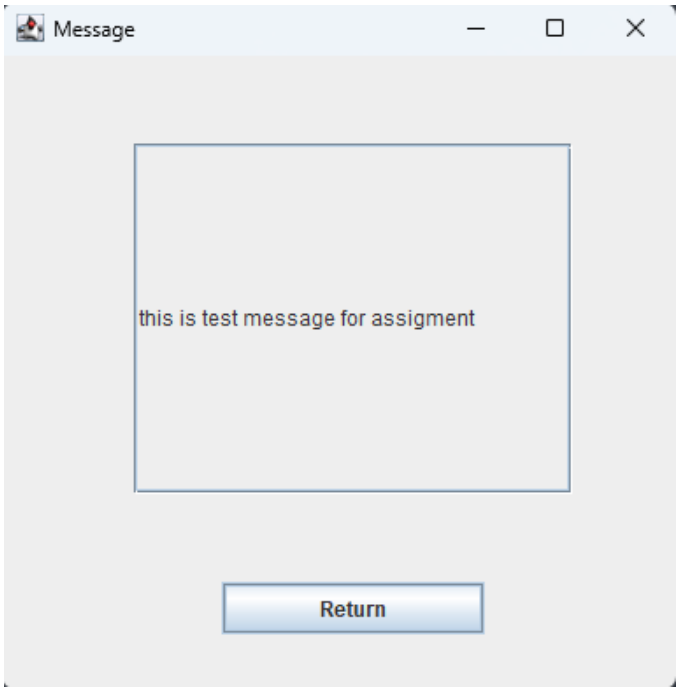

Figure 5 Message Page View

References

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- https://www.baeldung.com/java-md5
- https://www.geeksforgeeks.org/data-encryption-standard-des-set-1/