

The Assignment contains two files:

one is Frontend.java which is an executable file containing main method and other is CheckPassword.java.

Important: Please run the code in Eclipse by copying the two above files in logindetails name package.

In class Frontend.java the username is set by default for only one user "Programmer" and so the TextField is set as inactive. It has a HashMap which contains information of the date when the user has last changed/updated his password. In the constructor the instance variable date is initialised to today's date. Also (just for this program) in HashMap a value, that is, 29/10/2018 is set as the date when the password was last changed by the user against the key username that is "Programmer".

When the program is run (Window Login becomes visible), and when the PasswordField is gained focused, a difference between today and password last changed date is calculated. Because during program start we had set the old date for password last changed, the program states a need to update the old password. Except in the situation where the user on first go only click on Forgot Password button.

A new window "Password Update" is open. And main window is hidden. The cursor is in PasswordField of new Password by requestFocus(true) method of PasswordField. So any other action taken through which PasswordField loses its focus before entering the password that is if the PasswordField is kept empty, then an Error message of Invalid Password is displayed. And also if a user enters invalid password, then an Error message of Invalid Password is displayed. The password entered by user is checked against the password required criteria on losing focus from the PasswordField of new password,

1) The password should be exactly 8 characters with no space.

2) Having at least one each from the followings (A-Z), (a-z), (0-9), (@ # \$ % & * / \) and no other characters are allowed.

3) And it should not be same as previous 5 passwords set by user. (**Important:** Since this is password updating process so no default password was generated thus the password is not checked against any default password in CheckPassword.java).

In CheckPassword.java class which checks the password has two constructors. One default and another with a parameter char array of password from PasswordField. The class has a HashMap with key as username that is default user "Programmer" and for value a LinkedList of String storing passwords of the user. So during the above password checking in password updating process, a default constructor is called wherein the HashMap is filled. In

this case since there is no default password generated and also new password process is yet not completed so only 5 previous passwords are stored in the LinkedList against the username key.

The passwords are as follows

gh@1a#B3 (oldest password)

qp@5a#BV

jk\$1a%b3

ht/1A&B3

SN@1a*b8 (newest password)

Then password entered checking is done by calling `checkupdatenewpassword()` method, which has a parameter where the new password entered by user is passed. In this process the password is checked against the criteria mentioned above (avoiding checking with default password since none is generated in this updating process). It returns a Boolean value. If it does not match with the mentioned criteria an error message is generated and user has to enter the password again. If all is good then the user can proceed by re-entering the password same as he has entered in first PasswordField. The show password CheckBox when selected helps user to see the password he has entered.

When everything is done and ok button is pressed, and in case the re-enter PasswordField is empty or password entered is not same as the password entered in main PasswordField then an error message is generated. In case if both the fields have same password then the HashMap having user passwords is updated with recent new password. And the HashMap having dates of password last updated is updated with today's date.

The main window of login is open. The user can enter the new password which he has set. He can view his password by selecting show password CheckBox.

If the user tries to login with password field empty or with invalid password, he is giving a warning. And after 5 attempts of invalid logins his account is freezed.

The forgot password button option helps the user in case he has forgotten his password.

A window "Set New Password" is opened which works almost the same as "Password Update".

Except here a default password is created and the password entered by user is checked with the following criteria:

1) The password should be exactly 8 characters with no space.

2) Having at least one each from the followings (A-Z), (a-z), (0-9), (@ # \$ % & * / \) and no other characters are allowed.

3) And it should not be same as default password and previous 5 passwords set by user.
(**Important:** Since this is forgot password process so default password is generated thus the password is checked against default password too in CheckPassword.java).

The passwords are as follows:

HL@8a#b1 (default)

gh@1a#B3 (oldest password)

qp@5a#BV

JK\$1a%b3

ht/1A&B3

SN@1a*b8 (newest password)

Important: Please note during testing my program, in password updating process if you enter the password same as default password it will take it, as no default password was generated in this process of updating. Now immediately after updating password with default and if you click on forgot password button in Login window, the default password will be generate by the program, then in that case the password list will be as below unlike mentioned above

[HL@8a#b1, gh@1a#B3, qp@5a#BV, JK\$1a%b3, ht/1A&B3, HL@8a#b1]

[Default, oldest password, 2nd oldest password, 3rd oldest password, 4th oldest password, newest password]

Please note the default and newest are same.

Thanks

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