|  |  |  |
| --- | --- | --- |
| **LAB211 Assignment** | **Type:** | **Short Assignment** |
| **Code:** | **J1.S.P0070** |
| **LOC:** | **150** |
| **Slot(s):** | **3** |

**Title**

Login system of the Tien Phong Bank’s Ebank

**Background**

(Module extracted from TienPhong Bank, ebank project)

**Program Specifications**

Login function of Ebank system includes:

1. Vietnamese

2. English

3. Exit

If the user selects 1: Switch the interface language to Vietnamese and perform “check login” function.

If the user selects 2: Keep the English interface and perform “check login” function.

Check the Login function:

1. Require to input an account number :

* Check the account number must be a number
* Each account number must be 10 digits.

1. Input a password:

* Check length of the password which is enough length or not
* Check the password which includes alphanumeric or not.

1. Require to input one character or multiple characters in the captcha:

* Create a random captcha code in each login.
* Check the input characters of captcha are correct or not.

***Function details:***

**Function 1:** Display a menu and ask users to select an option.

* User runs the program. The program prompts users to select an option.
* User selects an option, perform **Function** **2**.

**Function** **2**: Perform language based on the selected option.

**Function 1: Change language**

* + Use the resourceBundle to get the value of the language according to the key in 2 files as En.properties and Vi.properties which are corresponding English and Vietnamese

.**Function 2: Checking account number**

* + Using Regular Expression to check the validity of the account number was input at the request of the assignment.
  + If the account number is invalid, it returns an error message corresponding to the language you chose.

**Function 3: Check the password.**

* Use a RegularExpression to check the validation of the inputted password.
* If the password is invalid, then return an error message corresponding to the language you have just selected.

**Function 4: Generate a random captcha code.**

* Use the Random function to generate a random sequence, and then converser to characters (type char) .

**Function 5: Check the captcha code**

* Use the function contains () to check the captcha characters input exists in the captcha string was born at first did not.
* If the captcha characters are invalid, then returns the error message that corresponds to the language you have selected.

**Function 6: Login**

* Allows the user to input the account number, password and captcha from the keyboard.
* If a valid account number, then allows the user to input a password and if the account number entered is not valid, then print out the error screen and allows the user to input again.
* If valid password then allows users to input captcha. Otherwise then print out the error screen and allows the user to input again.
* If the captcha is not valid then print out the error screen.

***Expectation of User interface:***

1

-------Login Program-------

1. Vietnamese

2. English

3. Exit

Please choice one option:

So tai khoan: 1

So tai khoan phai la 1 so va phai co 10 chu so

So tai khoan: a

So tai khoan phai la 1 so va phai co 10 chu so

So tai khoan: aaaaaaaaaa

So tai khoan phai la 1 so va phai co 10 chu so

So tai khoan: 123456789

So tai khoan phai la 1 so va phai co 10 chu so

So tai khoan: 0123456789

Mat khau: 1

Mat khau phai trong khoang 8-31 ky tu va phai chua ky tu va so

Mat khau: 12345678

Mat khau phai trong khoang 8-31 ky tu va phai chua ky tu va so

Mat khau: aaaaaaaa

Mat khau phai trong khoang 8-31 ky tu va phai chua ky tu va so

Mat khau: 11111111111111111111111111111111

Mat khau phai trong khoang 8-31 ky tu va phai chua ky tu va so

Mat khau: 123456ab

Captcha: H9MOA

Nhap 1 ky tu captcha: Adafda

Captcha sai

Nhap 1 ky tu captcha: H

Account number: 1

Account number must is a number and must have 10 digits

Account number: a

Account number must is a number and must have 10 digits

Account number: aaaaaaaaaa

Account number must is a number and must have 10 digits

Account number: 123456789

Account number must is a number and must have 10 digits

Account number: 0123456789

Password: 1

Password must be between 8 and 31 characters and must be alphanumeric

Password: 12345678

Password must be between 8 and 31 characters and must be alphanumeric

Password: aaaaaaaa

Password must be between 8 and 31 characters and must be alphanumeric

Password: 11111111111111111111111111111111

Password must be between 8 and 31 characters and must be alphanumeric

Password: 123456ab

Captcha incorrect: H9MOA

Enter a Captcha incorrect characters: Adafda

Captcha incorrect

Enter a Captcha incorrect characters: H

2

3

**Guidelines**

**Student must implement methods**

setLocate

checkAccountNumber

checkPassword

**in startup code.**

- Create a Main class to display the selected language in the Menu.

- Create the Ebank class including the following functions:

**Function 1:** Convert the languages.

* The program will switches from this language to another one, so that the result is the elements is defined in the Language.properties file will convert to another one.
* Implement the function: void setLocate(Locate locate).
  + Input :
* locate: name of properties file which needs to be converted.

**Function 2:** Check the account number.

* The program checks an account number, so that it must be one number as the defined requirements.
* Implement the function: String checkAccountNumber (String accountNumber)
  + Input :
* accountNumber: account number needs to be checked.
  + Return value: messages about the value of the account number.

**Function 3:** Check the password.

* The program checks the password, so that it must assure the defined requirements.
* Implement the function: checkPassword String (String password)
  + Input :
* password: the password needs to be checked .
  + The value returns: messages about the value of the password.

**Functions 4:** Generate a random captcha code.

* The program generates a random captcha code, so that the it must assure the defined requirements.
* Implement the function: String generateCaptcha ()
  + Return value: a random captcha string.

**Function 5:** Check the captcha code.

* The program checks the captcha code, so that the result is a captcha string which must assure the defined requirements.
  + Implement the function: String checkCaptcha (String captchaInput, String captchaGenerate)
  + Input :
* captchaInput: Captcha is inputted
* captchaGenerate: Captcha is generated
  + The value returns: The message about the value of the captcha.