

Programming Java EE

Term project

Team members:

Cristel Carvajal C0824984

Rajeev Dawadi C0846000

Fatih Caliskan C0839835

Jashandeep Sandhu C0834947

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INTRODUCTION

A banking system refers to a collection of a network of institutions that provides financial services to the people. The following are some of the institutions that belong to the banking system; internet banks, investment banks, savings and loan associations and insurance companies. The purpose of banking systems is to provide security and confidence in the economy. Functions of banking systems:

Accepting of deposits and withdrawals, offering loans, offering checking accounts, Offering credit and debit cards, Bill payment services and safe deposits.

With the utilization of 11 servlets and database, we created simulation of a primitive banking system that allows the users(employees) to login to their account and create the customer's account including the option to see the table with the information of all customers. The system allows the user to do some of the bank transactions like:

- [Transfer Money](#)
- [Make a Deposit](#)
- [Withdraw Money](#)
- [Pay Bills](#)

INTRODUCTION OF THE SYSTEM

We created a bank website using JSPs, Servlets and MySQL Database. The bank is called "Bank of Toronto". The system will perform multiple tasks as a regular bank website. Some of these tasks include:

- Display their current balance
- Deposit money
- Draw money
- Transfer money to other accounts within the same bank
- Pay utility bills
- Create a new account
- View all employees

DESCRIPTION OF THE SYSTEM

In the main page (home.jsp), when you click **Employee Login**, it will take you to the **employeeLogin.jsp** page where you have to enter your Username and your Password and login button. After you click this button, it will take you to the **employeeDB.jsp** where we have two links; one for Create a new customer account, and the second one to view table of all customers. First link will direct you to the **createAccount.jsp** page where the user will fill all the requirements for the customer. We used Name, Date of Birth with the date format mm/dd/yyyy, Address, City, State, Zip Code, Country, Phone, Email, Membership Type i.e. Saving or Chequing, Account number, PIN, Username and Password. The another link will direct to **customerTable.jsp** where we can view all the customers.

Coming back to the main page, when you click **Customer Login**, it will direct you to **customerLogin.jsp** page where the customer has to type the Account Number and Password to login. After that, it will direct you to customerDB.jsp page. Here, customer will be able to see his bank balance and perform 4 different kinds of transactions like :[Transfer Money](#), [Make a Deposit](#), [Withdraw Money](#) and [Pay Bills](#).

1. Inside transfer money (transferMoney.jsp page), you have to type your email and the amount you want to transfer, then submit.
2. Inside [Make a Deposit](#) (depositMoney.jsp page), you have to type the amount you want to deposit, then submit.
3. Inside [Withdraw Money](#) (withdrawMoney.jsp page) you have to type the amount you want to withdraw, then submit.
4. Inside Pay Bills (payBills.jsp page), select which bills you want to pay which can be Electricity, Wi-Fi, cable, water then enter the amount and submit.

REQUIREMENTS

To run this project it is required to add annotations-api, jsp-api, servlet-api jar files to build path. Additionally, jstl and jstl-api jar files must be added to “lib” folder under the “WEB-INF” directory. On the database side, a provided sql script(in the project folder) must be executed in order to create the proper database.

USER MANUAL

Change database username and password to your own information.

MODELS

We have two classes for this project, Customer and Employee. Employee class has emp_id, full_name, password, job_title attributes. And Customer class has account_no, full_name, email, phone, pin, and balance attributes. It is oriented with the database, and the database has the same attributes as classes for the tables.

ISSUES

During the making of the project, we have faced 2 main errors. One is org.apache.jasper.JasperException, the other one is an issue with database autoCommit. To fix the first error, [this resource](#) helped us. We had to use the 2.0 version of JSTL but instead we were using 1.2, we fixed the issue by downloading the latest version of JSTL. For the second issue we used [this resource](#), and we found out that we had to set auto commit “true” in our code in order to update the database.

ERRORS

wrong password or email

If the wrong username or password is entered to login pages this message will display

Customer with this account number exists already!!!

When an employee enters an account number that already exists when creating a new customer, this error message will display.

There is no account associated with this email!!!

When customer is trying to make an email transfer, if he enters an email that doesn't exist, this error message will display.

You do not have enough money in your account to withdraw 20003 dollars. Current Balance is: 1700

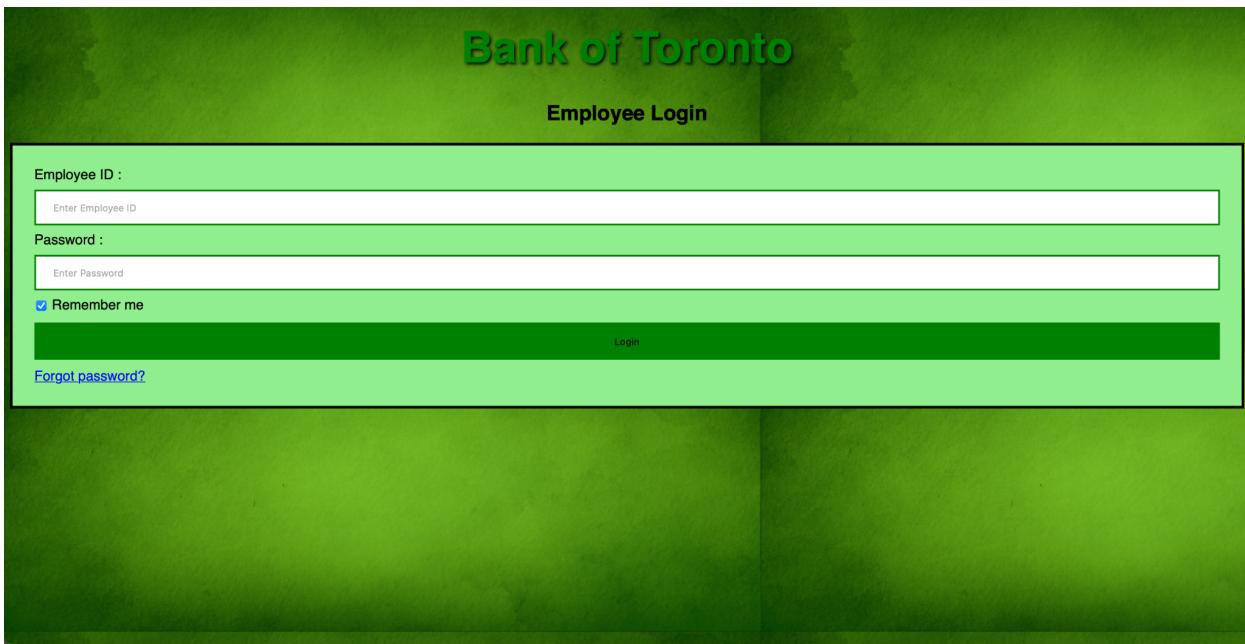
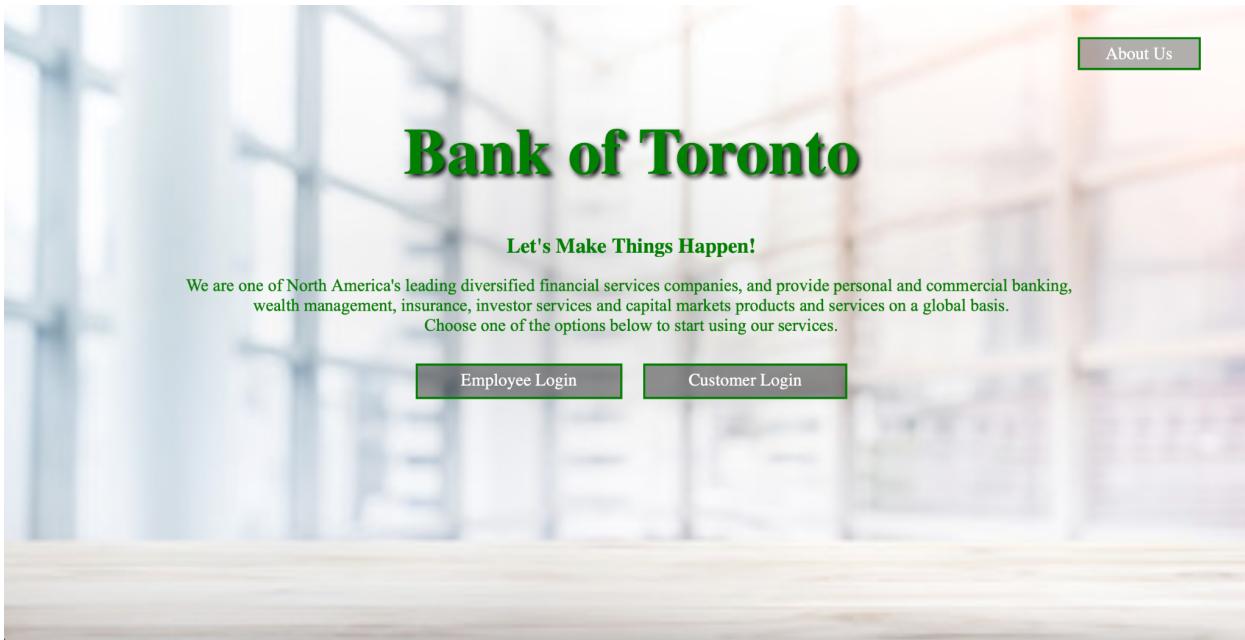
When a customer is trying to make transactions, if they don't have enough money this error message will display.

CONCLUSION

We did our research about banking systems, based on another banks pages we created our own system. In this project we shared the work. Fatih created the database and did the backend

software. Jashan created the models. Rajeev with Cristel help created the front end part, and Cristel created the report together with Fatih, Rajeev and Jashan. We worked like as team.

SCREENSHOTS



Bank of Toronto

Customer Login

Account Number:

Enter account number

Pin:

4-digits

Remember me

Login

[Forgot password?](#)

Bank of Toronto

Good day Zafer Caliskan!

Your account balance is 200

Here are the list of actions that you can take:

[Transfer Money](#)

[Make a Deposit](#)

[Withdraw Money](#)

[Pay Bills](#)

[Log Out](#)

Bank of Toronto

Make an transfer

Enter the email | Enter the amount |

Bank of Toronto

Deposit Money

Enter the amount |



Bank of Toronto

Pay Bills

Choose which bills you want to pay:

Electricity  Enter the amount  

Wi-Fi
Cable
Water

Bank of Toronto

Good morning! Fatih Caliskan

What do you want to proceed with?

Create a new customer account by clicking [here](#)

View the table of all customers by clicking [here](#)

[Sign Out](#)

Bank of Toronto

Create an account

Fatih Caliskan

New Account's Number:

Full Name:

Phone:

Email:

pin: 4-digits

[Register](#)



Bank of Toronto

List Of Customers

Account No	Full Name	Email	phone	balance
123456	Zafer Caliskan	zafer@gmail.com	1234567891	200
654321	Nalan Kirkac	nalan@gmail.com	9876543219	50

Go back to Dashboard [here](#)



REFERENCES

- <https://study.com/academy/lesson/banking-system-definition-types.html>
- <https://www.td.com/us/en/personal-banking>
- <https://www.stackoverflow.com>