Online Purchase System

Submitted by :

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Platform :   Java

Procedure :

First of all, the user will compile by using "make build" command in terminal in the project directory. After compile successfully "java bank 3000" by this command bank server will run in 3000 port number (here can also use different port). The bank server will open a listening socket on the specified Bank_Port(here 3000) and wait for a TCP connection from the store.

In the same directory in another terminal run "java store 5000 127.0.0.1 3000" by this command store will run in 5000 port.

Then the user will open a link of in a browser (firefox) as localhost:sourceport/index.html . This will send a GET Request to the server.java. Then in Response the store will send index.html (The online purchase system web site) to the browser. If there is no file named index.html then it will show 404 not found.

The bank server program will receive the request . When a user initiates a purchase, the store program opens a TCP connection with this listening socket. The store program then send all user information obtained from the web form over this connection. This program verifies if the current transaction should be processed or

not. For verification it maintains a database(text file) which contains every user first name, family name, postcode , credit number, balance and available credit. It check the first four fields if any match in the database. If no matches found for the four fields, an error indication is sent back to the store. Then the store send back an HTML message to the client browser indicating "The user information entered is invalid". If the information above is right, the bank server next checks if the user has sufficient credit available to pay for the current purchase. If the user doesn't have available credit only then an error message is sent back to the store. After received the error message store will send back HTML message to the client browser containing"Your account does not have sufficient credit for the requested transaction. If the user has available credit for the purchase, then a message indicating purchase approval is sent back the store. Then store will send back "Transaction Approved" HTML Message to the client browser.
When transaction approved the bank will modify the available credit and balance for the user accordingly.

Resources :

I) For HTML design we learn from https://www.w3schools.com/
II) For client/socket programming we needed help from https://www.javatpoint.com/java-networking
III) https://stackoverflow.com/questions/3033755/reading-post-data-from-html-form-sent-to-serversocket for HTML form and server communication.

Limitations :
Bank server should run every time in our program. It can handle on post data. This program is tested for various host name and not problem is detected yet. It is hopeful that it will work fluently for all kinds of host-names.