Assignment -7

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Course: Software Development Concepts(CSCI 3901)

1. Overview

- This is client server based socket program. This works on three tier architecture. These tiers are client, server and database.
- In this program client program works for an employee of Northwind food distribution company.
- The server code handles some of the functionalities of signing in, addition in products , dropping , changing of customer details and many more.
- So, client code requests this functionalities from server to execute using database by using Order3901 (version 1.0) protocol which has above some messages which implements above functionalities.
- This program has also functionalities which gives multiple error codes when errors are encountered.
- It is designed as the different functionalities are executed in predefined flow.

2. Files and external data

- The program uses Northwind Sample database for information fetching. It uses the replica of database for information manipulation of products of Northwind food distribution company.
- The program generates new ordereid and also adds the products quantity as user input. So, this kind of many operations are done on database.

3. Data structures and their relations to each other

- HashMap – There is Hash Map is used to get faster access those data which continuously used in the program such as Products
- **Important Variable names**
- DbObj = it is database object for accessing Database.
- StoredCookie - stores the cookie generated by random function which is checked everytime for execution of different functionalities for one particular employee or user
- clientSocket - for opening the connection to server from client

- serverSocket - server socket
- acceptance - condition for fetching data from client
- ContentSize - holds the bytesizeOrders = it is object of array list which stores sequence of orders
- OutCustomerList - Stores Customerlist
- AppendedString - used for appending the new list item into existing string
- rs = resultset variable which holds the data fetched from db.
- CloseConnection() - closes database connection
- df – holds the dates for insertion
- OutProductList - stores the generated productlist
- In - for holding data comes from client
- Out - to send data to client from server

4. Assumptions

- When authentication fails then it gives the message of “401 notok”.
- It uses DBAccess file which I used in Assignment 6
- Currently for testing I am using localhost and port 20112

5. Limitations

- The code does not handle the case sensitivity for username in authentication.

6. Key algorithms and design elements

- First of all program starts with authentication if user is authenticated then program flow in positive direction.(Executes AUTH message)
- In the next step listing of customer is executed through LIST message or if user enters CustomerID then it asks for changing the shipping the address. If user inputs Y then it passes the information from client to server. (Executes NEW message)
- After that it adds the products and quantity in container through ADD message, then if user gives input “Y” for ordering then items would be added into orderdetails table into DB through ORDER message. If user presses “N” then program flow move ahead by executing DROP message and again will ask to add another order.

- Next, if user presses “N” for another order then user will be logged out through LOGOUT message. And then execution of program completes.

- **Design Elements**
- GetCustomerList() - returns the customerlist to OrderServer generated from GenerateCustomerList()
- GetContentSize() - returns the byte value of list to OrderServer
- GetCustomer(String CustomerID) - fetches the customer list from database
- GetCustomerExist(String CustomerID) - checks if customer exists or not in db
- GenerateCustomerList() - Generates Customer List from database
- UpdateAddress(String CustomerID){// Updates address in DB which is prvided by the arguments of NEW message
- AddOrder(String ProductId,String Qunatity) - adds the quantity of respected ProductID
- GetTotalOrders() - returns the order list to Orderserver
- PlaceOrder(String CustomerID,String EmployeeID,String ShipName) - This executes the function of ORDER message by adding the products in DB of respected OrderID
- DropOrder() - executes DROP message which drops the products list which are added through NEW Message
- GetProductList() - returns the productlist to OrderServer
- GetProductPrice(String ProductID) - fetches Unitprice of respected product from database
- CheckProductExist(String ProductId) - which checks whether inputted product is not dicontinued or exists in database
- GenerateCustomerList() - fetches product list from DB
- Authenticate(String LastName,String DateOfBirth) - which checks the username and password values from database

7. References

- No references. All queries which are used in this program is having standard definitions.