Ritzpa Stock Exchange – Part 3:

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System Details:

Login Page: http://localhost:8080/Rizpa_v3
- Login to the Ritzpa V3.0 systems.
- Insert your name and press submit for enter to your account.

Main menu page:
Functionality:
- o Main menu - return to main menu.
- o Logout – log – out the system.
- o Load XML – use "choose file" to search for your XML file and press open. If you press on "Load XML" it will load it to your account.
- o Choose Company: choose the company you'd like to see and press "Submit".
- o Company Issue – fill the form below and press submit for Issue the company.
- o "Add money to your account" -add money (Liquid money) to your account.

Tables:
- o Stocks - Displays stock data.
- o Users – Display which users are online.
- o Action list – summarize all the user's Account movements (adding money to account and transactions).
- o Cash (in main bar) – display the amount of "Liquid money" the user have in the account.

Single Stock Page:
Main bar: Display the General Details about the stock.
Secondary bar: Display the user's personal details about the stock.
Trade Ordinance: fill the form in order to make a bid.
Table: Display the user's transactions.

Execution of a trading ordinance area (Single Stock page):
- **LMT/MKT/FOK/IOC –** Choose the kind of trade instruction you want to do.
- **Sell/Buy –** Choose the side that you are want to be in the trade instruction.
- **Stock Amount -** Define how many stocks you would like to buy.
- **Stock Price -** Define the maximum price you are willing to pay/ sell.
- **Apply Now -** send and forget.

A little bid about our thinking and explanations:

- **How we handle the money:** we took the system to be like the "real life Forex". That means that the account is divided into 2 types of "money accounts". The first on is the Liquid Money: the actual money you have in your wallet, you can buy new stocks only from that "account", this money presents as "Cash" in our main and stock pages. The second is the "Worth of the stocks": means (Stock's quantity * stock's price) the money I have from the stocks. That represents separately in every stock page, specified to it stock and in the main menu, in the "Action Table" it present the "full worth of the account: Liquid Money + price*quantity.
- **Exceptions:**
    o In all the places you, as a user require to enter a number, there are limit to 1, moreover you physically can't insert a string to those fields.
    o You can't choose more than one option in the selected parts – Radio buttons option.
    o You can't choose any kind of files that are not xml.
- **Action list (Main - Page):** "Action" is every transaction that Has been performed and every insertion of extra liquid money to the account.
- **Admin:** in order to be an admin please select the coicebox that says "admin" in the log in page. w
- the program won't break by any chance.

Detailed The Classes:

From part 1:
1. **Stock Class** – The object stock.
    a. **Sub-Class – Transactions** – For the Transactions.
    b. **Sub-Class – Bid** – For the bids – sell or buy.
** We chose to use sub-classes because all the Bids/Transactions actions are according to the specified stock – every stock should "know" all the actions that happened in its "territory".

2. **StockExchange** – The main Class that have all the market- means that all the stocks/ transaction, bids ETC. are saving in this variable.

**From Part 2:
1. **User** – for Users.
2. **Item** - for the list of holdings every user has.
3. **Controller –** The application controller.

**From Part 3:
1. **Action –** class for handling the actions as explained.

Utils:
1. **ServletUtils :** class for general data about the engine of the system.
2. **SessionUtils:** class for data about which user we are now.

Servlets:
1. **ActionMainScreenTableServlet –** Sets the main menu "Action table" and update it after every action.
2. **AddMoneyServlet –** Deals with adding "liquid money" to the account.
3. **BuyTableServlet** - Set and update the "List For Buy" in Single stock page for admin.
4. **CashServlet –** Sets and update the cash.
5. **CompanyIssueServlet** - Deals with the action of issue a new company.
6. **LoadXMLServlet –** Deals with getting the XML file and update the details of the user.
7. **LoginUserServlet –** Deals with collecting the data of the new insert and make new one.
8. **LogoutServlet –** returns to login Servlet.
9. **RedirectToStockPageServlet –** Forward to selected stock.
10. **SellTableServlet** - Set and update the "List For Sell" in Single stock page for admin.
11. **StockMainScreenTableServlet** - Set and update the "Stocks table" in Main menu page.
12. **StockOptionServlet –** Deals with the selection and redirection to selected stock.
13. **TradeInstructionServlet –** Deals with the trade ordinance (add bid).
14. **TransactionServlet** - Set and update the "List For Transactions" in Single stock page for admin and merchant.
15. **UserMainScreenTableServlet** - Set and update the "Users table" in Main menu page.
16. **We accomplish the chat as inn Aviad's example, so all the necessary servlets for that.**

We were unable to accomplish to perfection the Exception part. We only discovered at a very late stage during the writing of the program that to generate the errors from the engine to actually "pop up" or write an error in some place correctly one has to use ajax, and we did not implement a large part of the project in this way. So, it was too late to change everything.
** all the Integrity checks are set correctly, so the engine won't do something he shouldn't, the problem is to presents the errors to the screen.

We didn't accomplish exception for:
- **Company Issue:** If you entered name or symbol that already is in the system it won't make a new company, but it won't give note.
- **Trade Ordnance:** when you make a bid or transaction happened it won't give you note.
- **LoadXML:**
    - It won't let you insert anything but XML files.
    - If you entered an XML file with problem that the user has item that is not on the Stocks list, it will ignore that specific item.
    - If you get a "bad" XML file with sum duplicated or negative number or any other kind of problem the XML won't insert but the user won't get any note.

Bonuses:
In the main menu page at the top bar there is a tap called "chatroom", by pressing it you get into the "chat window"

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Thanks for reading me!

Enjoy ☺