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| **CAB302: Software Development** |
| Electronic Asset Trading Platform: Report |
| Semester 1, 2021 |

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# **Requirements**

## **Must have**

General:

* Make thing to buy and sell organisational assets
* Ability to add new asset types
* System: add buy orders and sell orders. Both need to input; BUY/SELL, organisational unit, asset name, quantity, price, date
* Orders are successful if the there is a sell order that is less than or equal to the buy order price.
  + Eg. BUY order: 100 CPU hours at 10 credits each.
  + SELL order = 50 CPU hours at 5 credits each.
  + RESULT = SELL order complete. BUY Order: 50 hours at 10 credits. First 50 hours are bought at 5 credits each.
* Server keeps track of all unit assets, credit balance and all trades.
* Client connects to server to list trades.
* There should be no artificial limit to number of commodities in the database, no limit to number of trades that are listed and no limit to number of users in the system.
* Each user must have their own username and pass so that only authorised users from each organisational unit are able to trade
* Each user will be trading as part of an organisational unit. They will have access to their organisational units credit balance and assets.

GUI:

* Nice friendly GUI.
* List current buy and sell orders (sort it?)
* List their own organisational units offers
* Able to add/remove/edit their own organisational units orders
* Restrict ability to be able to buy for more credits or sell for more assets than the organisational unit has (cant go below 0)
* List price history of each asset, and create a graph that shows price over time (this may be some work, so its not that important.)
* When a trade is reconciled, show a little message somewhere that the trade is fulfilled
* User should be able to change their own password without needing the IT team

IT admin team:

* Able to do these from the GUI with a special admin account
* Able to create new organisational units
* edit the number of credits each unit has
* edit the number of assets each unit has
* able to add new users and assign them passwords and assign them to organisational units
* able to create new admin accounts for new IT admin people
* No plain text passwords should be sent over the network, at least hash the password before sending it over. No plaintext passwords in the database either

Database:

* Use MariaDB/PostgreSQL/SQLite
* Stores User Info (user, pass, acc type, organisational unit)
* Organisational unit info (organisational unit name, credits, assets, quantity of each asset)
* Asset types (asset names)
* Current trades (BUY/SELL, organisational unit, asset name, quantity, price, date)
* Trade history (same as current trade info) (only if trade is successful?)

## **Should have**

General:

GUI:

IT admin team:

Database:

## **Nice to have**

General:

GUI:

IT admin team:

Database:

# **Detailed Design**

## **Design of Classes**

* Public Methods and Fields (where they are called)
* Arguments and Returns of each method
* Any Assumptions
* Exceptions

\*\*\*\* We will used JavaDoc for this and reference it \*\*\*\*

## **Interaction of Classes/Methods**

* Class Diagram (UML) (if you guys want)
* Or a description of interconnectivity

## **Design and Dataflow (GUI)**

* Create user interface mock-up (drawing tools)
* Server GUI Mock-up (if we have one)

## **Database Schema**

* Tables and table columns (names and data types)
* Connections of tables (primary and foreign keys)
* Object-Role Modelling (if we want)

## **Network Protocol**

* Description of data to and from the server and user
* How that data should be interpreted???
* Basically, a description of everything required to recreate a compatible server

# **Sprint Planning (for milestones)**

## **Adrian Ash**

## **Matthew Biggs**

## **Christopher Paterson**

## **Adrian Roy**

# **Deployment (final submission) (might be in readme, unsure)**

## **Database Setup**

## **Java Frameworks**

## **……**

# **References**

EndNote to pool references?

Update test