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**FIT5042 Design Report (Major Tasks)**

Banking Enterprise Application

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Tutorial Time: Mon 18:00-20:00

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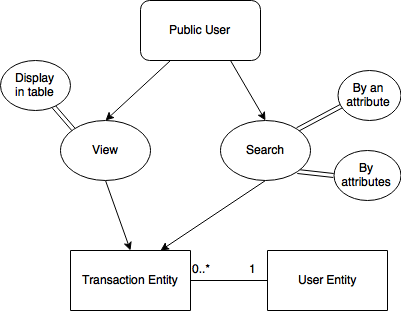
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# 1. Overview

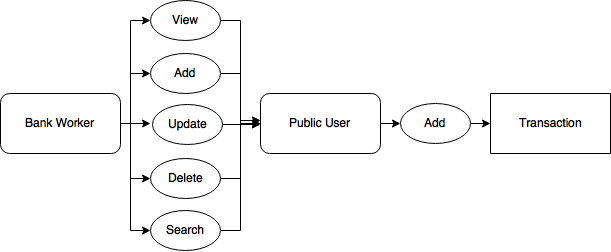
This assignment is to build a web-based Java prototype of a Banking Enterprise Application as well as a desktop client application version. Some Java enterprise technologies should be used in the assignment: JSF, RESTful web services, EJB, Persistence API and so on.

The basic function is that users can login in the system by their username and password. System will then redirect the user to the specific page. If the user is a public customer, he/she can view and edit his/her own information, and can view, create, sort, multiple search their transaction records. If it is a bank worker, he/she can view, create, update, delete and search users.

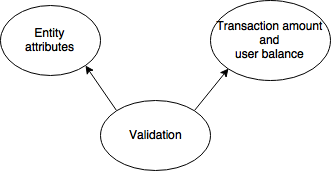
# 2. Functional diagram



* There are two entities in database, user and transaction. One user has 0 to many transactions and one transaction can only belong to one user.
* Public user can view his/her transactions, the results are displayed in table.
* Public user can search his/her transactions, either by one attribute or multiple attributes.



* Bank worker can view/add/update/delete users, and can search by multiple attributes of a user.
* Publish user can create new transaction, such as deposit or withdraw money. So I add balance attribute to user entity, and add amount attribute to transaction entity.

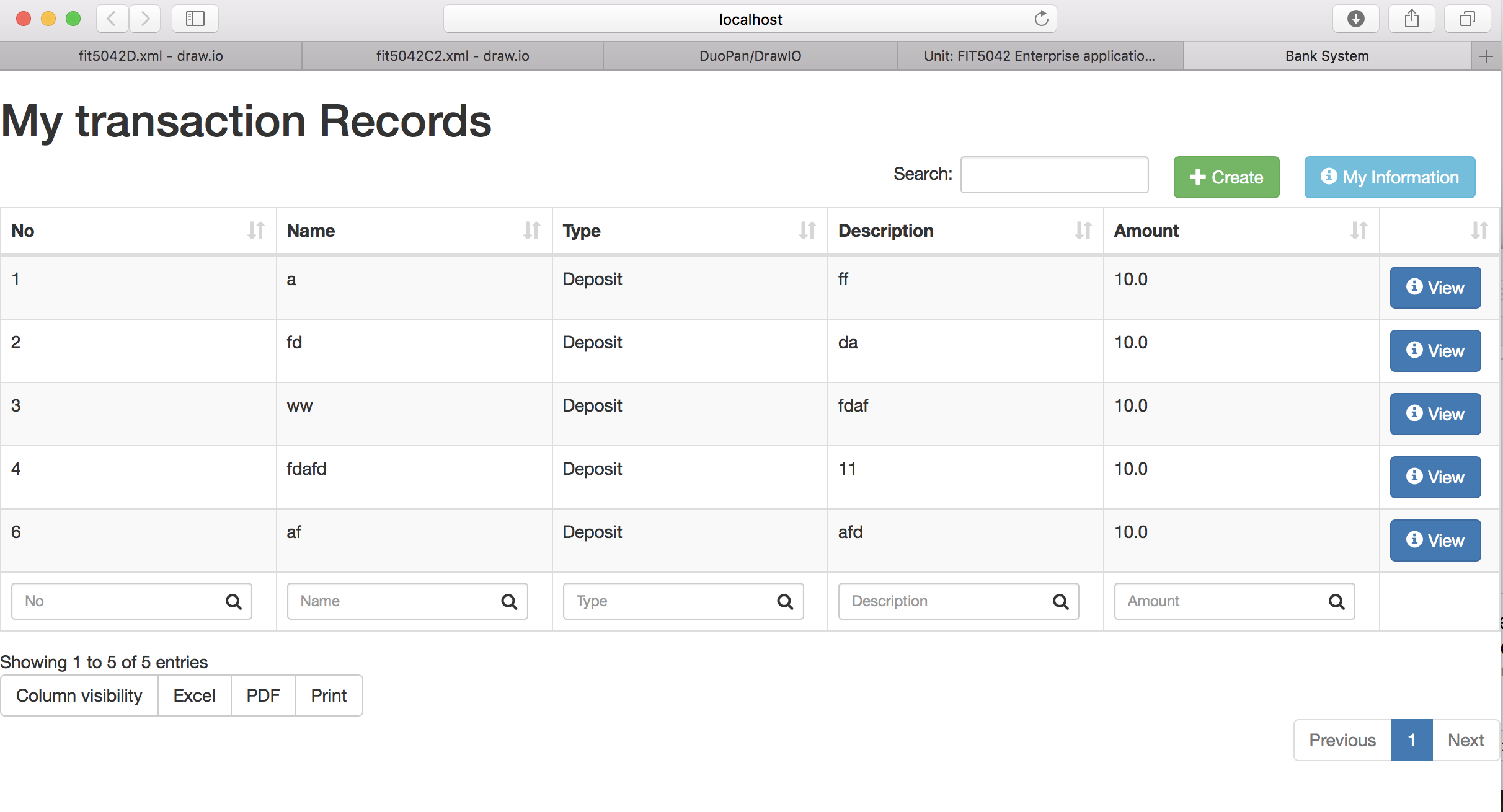


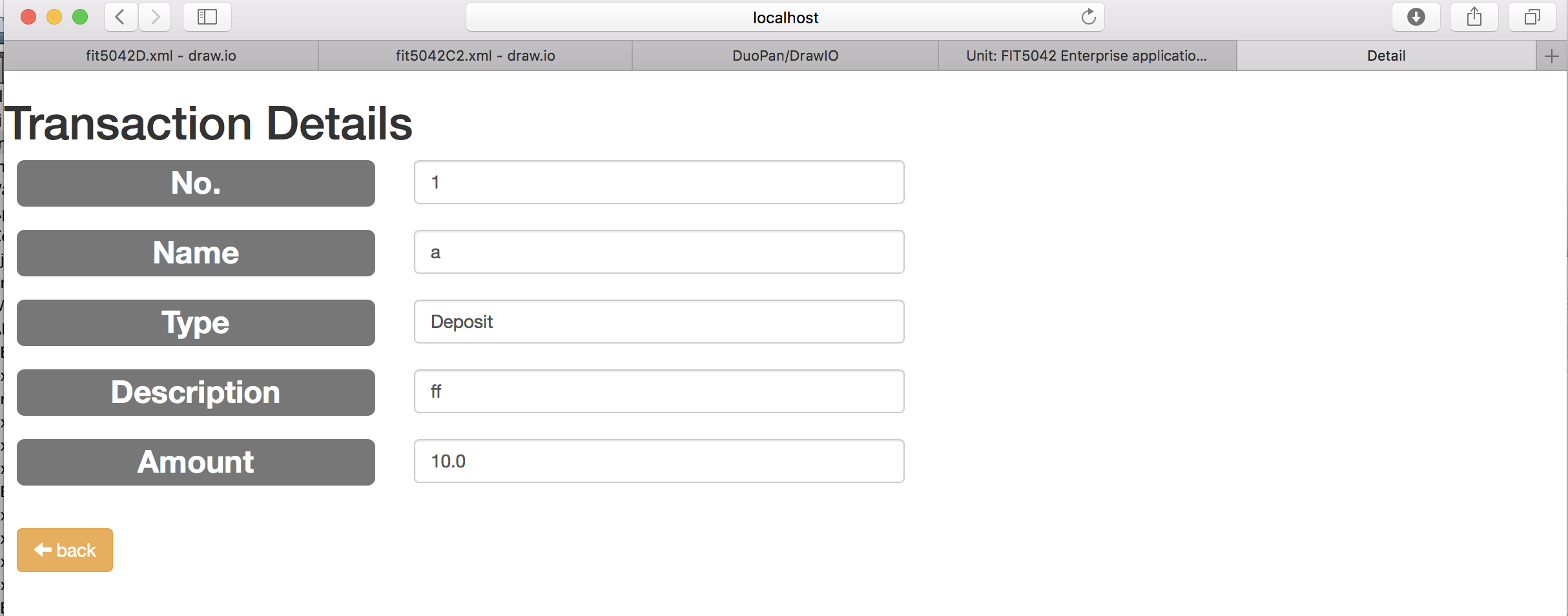
* When adding records to database, the system will do validation on each attribute as the assignment required. Such as the format of email.
* When a user withdraw money, the amount cannot exceed his/her balance.

# 3. Core program functionality

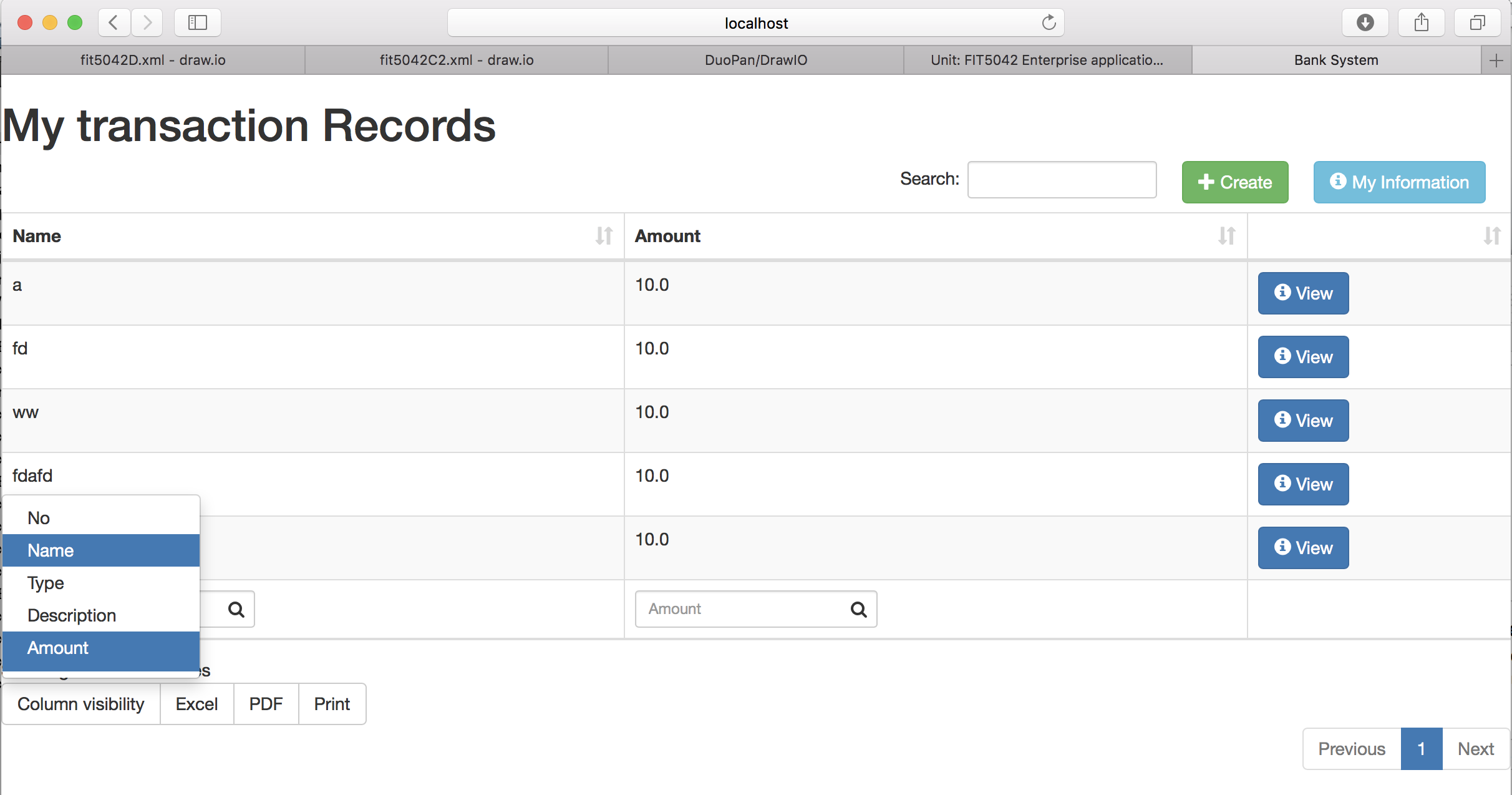
Use BootsFaces library to build the page, which is designed for JSF and based on Bootstrap. It provides a table control, and through changing its attributes, I can get functions I need.

* View all data in table, click view button, can see detail of this transaction record.

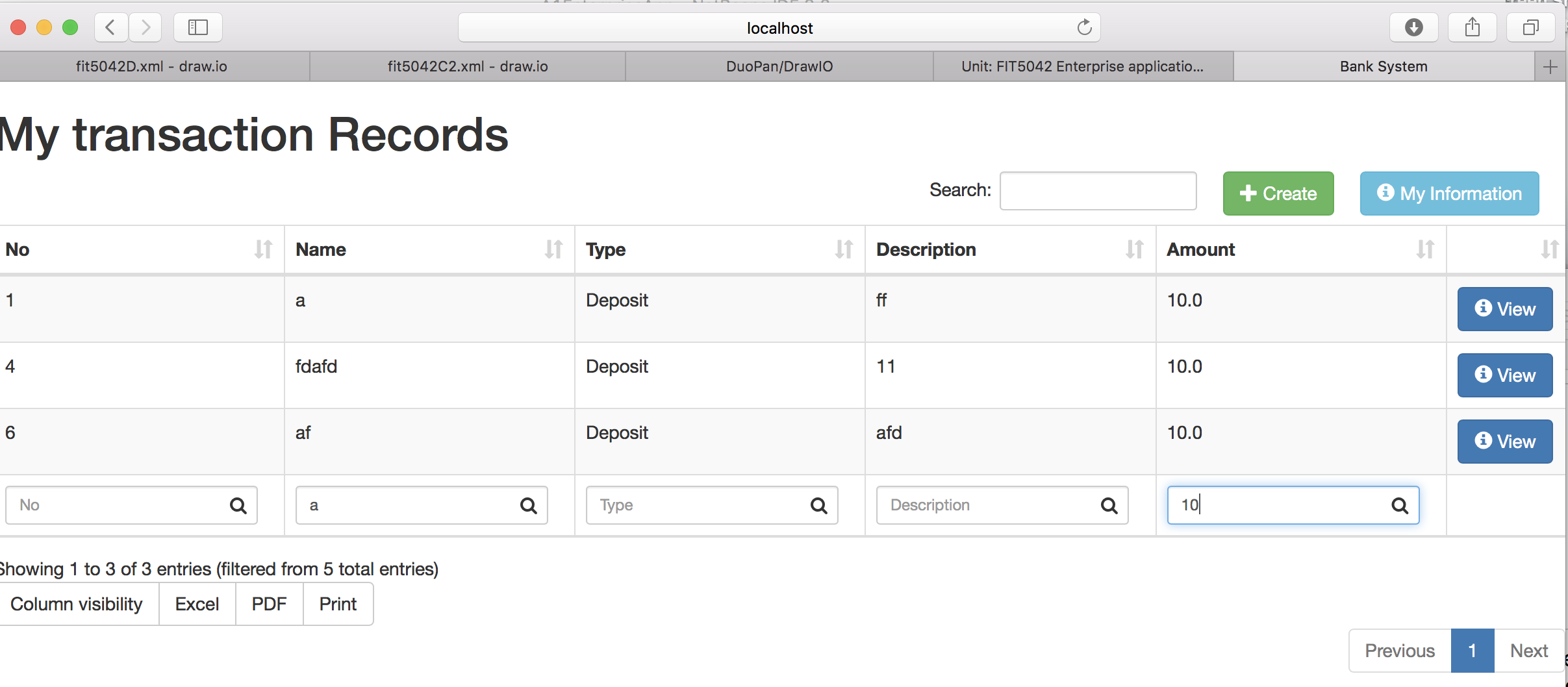




* Can choose which attributes to show on table.

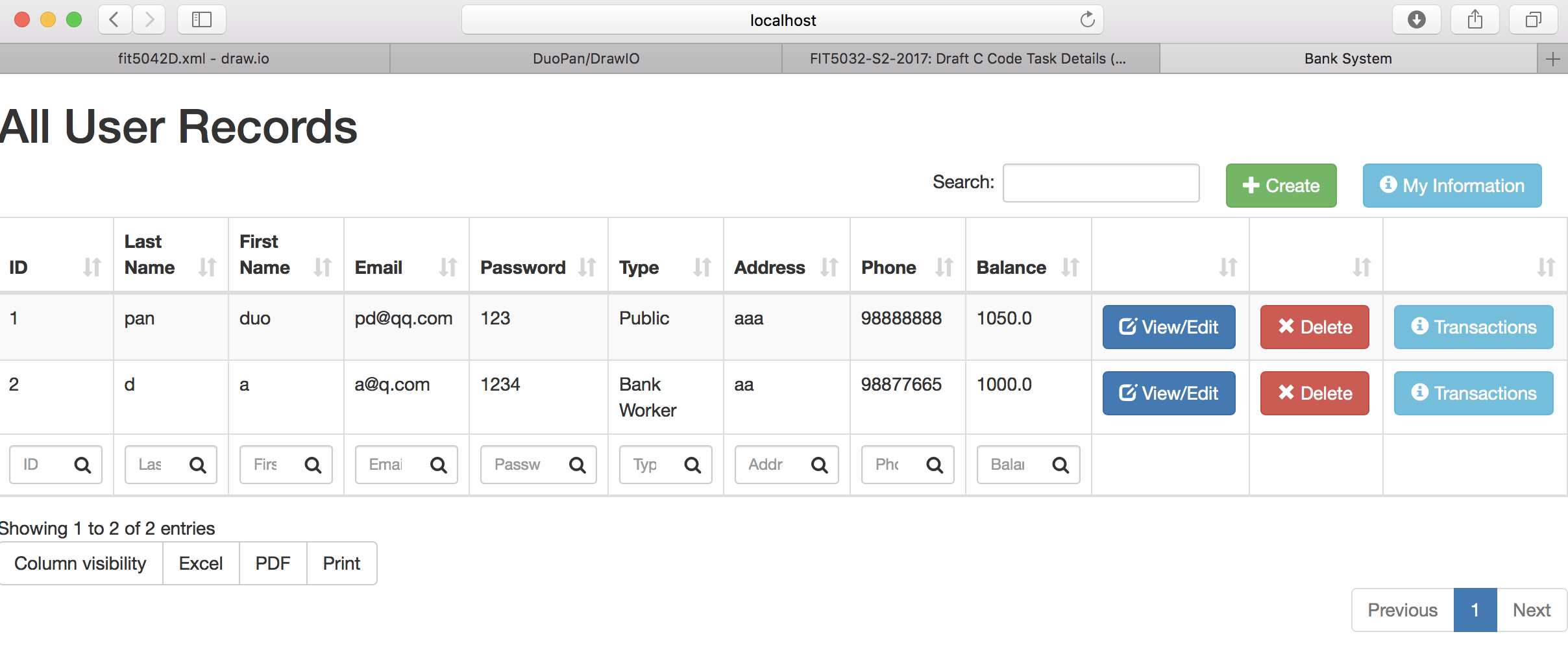


* Multiple search. I put a search textbox under each column, so users can input data in the corresponding search textbox to do multiple search. The example search attributes by both name and amount.

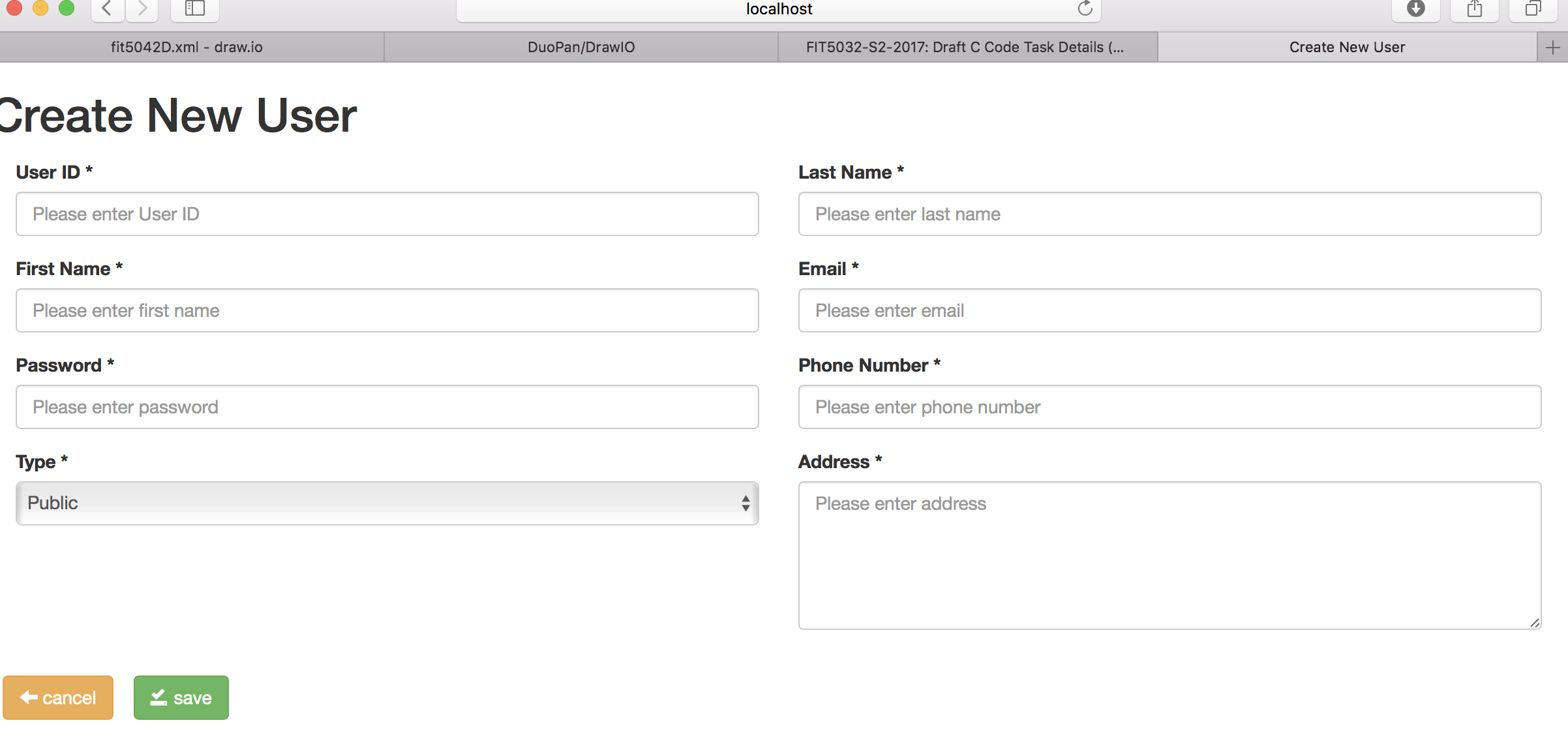


* Navigation: Provide buttons for user to view transaction details and come back to main page.
* Bank worker CRUD user functions:

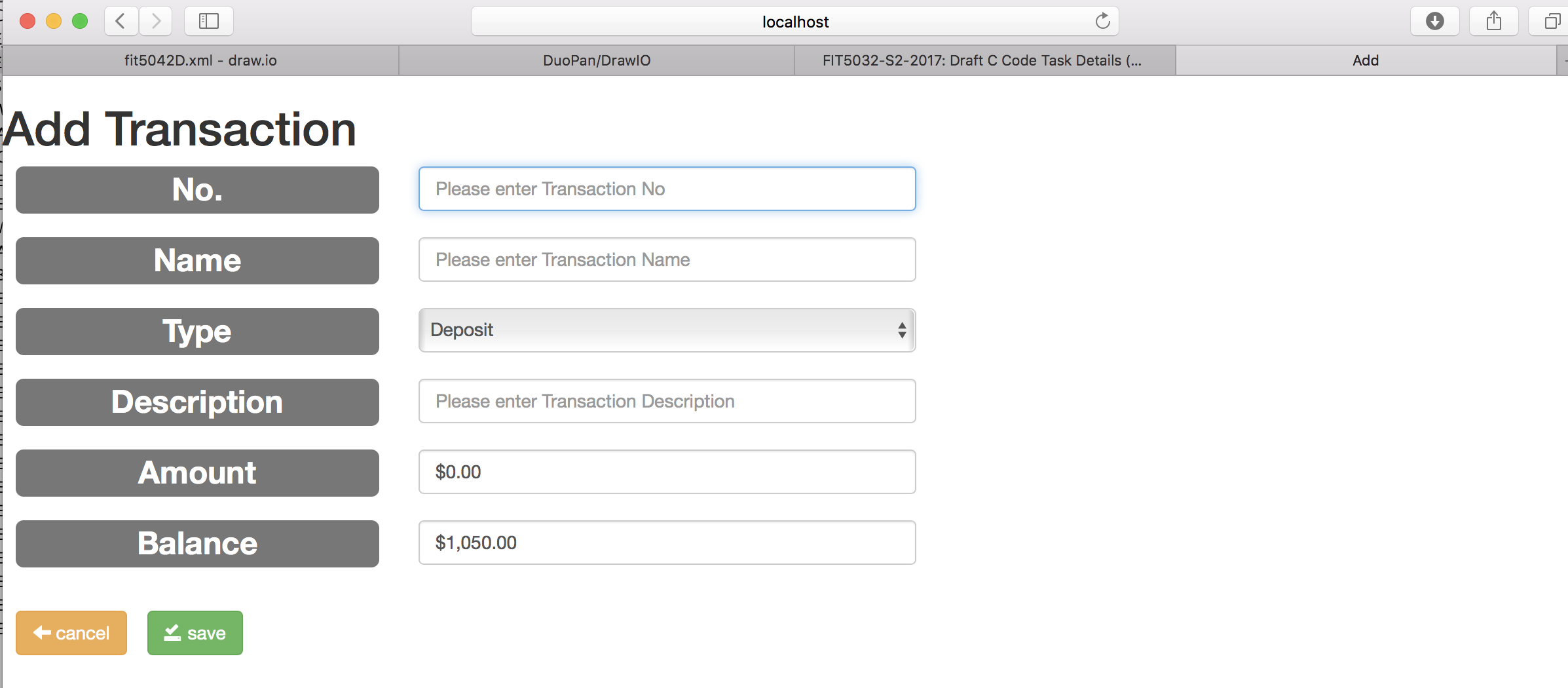
View all users / delete a user / view one user’s all transactions:



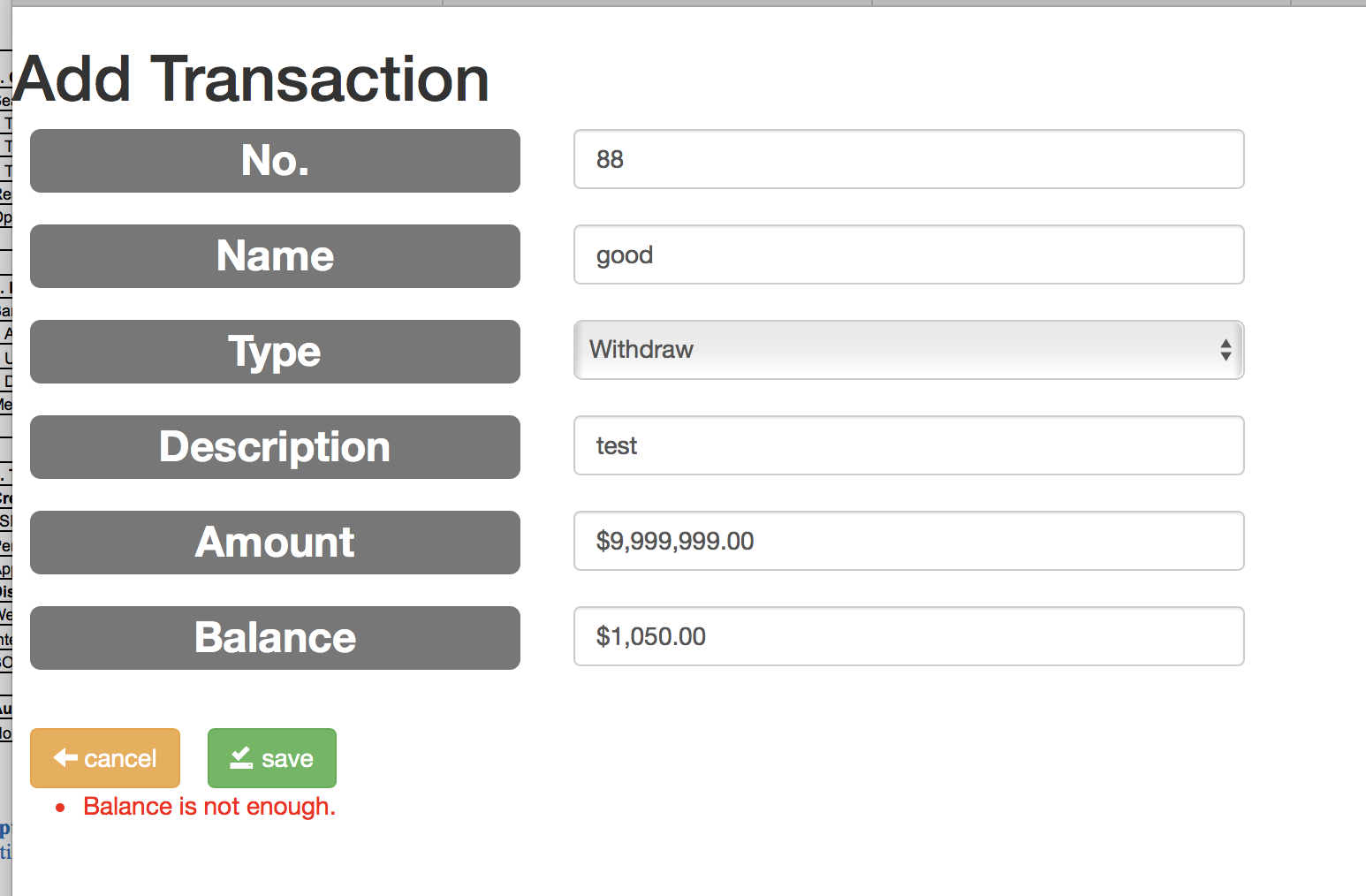
Create/Edit a user:



* Public user can create new transaction



* Validation: when user click save button, the system will do validation and prompt errors on the screen in red text.



# 4. Usability Design Review

* Navigation: Each page has good navigation buttons to the other pages, they are colorful and easy to find;
* Familiarity: This web site did not adopt any strange layout, so it is familiar with most people;
* Consistency: This web application can run at different browsers.
* Error Prevention: User inputs are check before store into the database;
* Feedback: When mouse moves over table rows, it will highlight.
* Visual Clarity: Data table makes the web site easy to read and use. Red color on delete button also remains user be careful when clicking. The whole page is clear and tidy.
* Flexibility: Many buttons in a page, so that user can easily go to a page they want. All the pages are connected in graph structure instead of linear.

# 5. Checklist of site functionality

|  |  |
| --- | --- |
| **1. Credit Functionality** | ✔️ |
| Search for Transaction by | ✔️ |
| Transaction Name, | ✔️ |
| Transaction No | ✔️ |
| Transaction Type | ✔️ |
| Results with tabular format with heading. | ✔️ |
| Option to view the full details | ✔️ |
|  |  |
|  |  |
| **2. Distinction Functionality** | ✔️ |
| Bank Workers can: View | ✔️ |
| Add | ✔️ |
| Update | ✔️ |
| Delete Users | ✔️ |
| Members of Public can make Transactions | ✔️ |
|  |  |
|  |  |
| **3. Technical Requirements** | ✔️ |
| **Credit** | ✔️ |
| JSF web clients | ✔️ |
| Persistence API | ✔️ |
| Application managed entity manager or container managed entity manager. | ✔️ |
| **Distinction** | ✔️ |
| Web client is required | ✔️ |
| Interaction between clients and database handled by EJBs | ✔️ |
| BOTH Criteria API and JPQL | ✔️ |
|  |  |
| **Audit** | ✔️ |
| No breaking of copyright | ✔️ |

# 6. User stories

I am not sure about this part. Need discussion on tutorial. Thank you.

# 7. Entity relation diagram

# 8. Data dictionary