THE DESIGN AND IMPLEMENTATION OF AN E-COMMERCE SITE FOR ONLINE BOOK BIDDING

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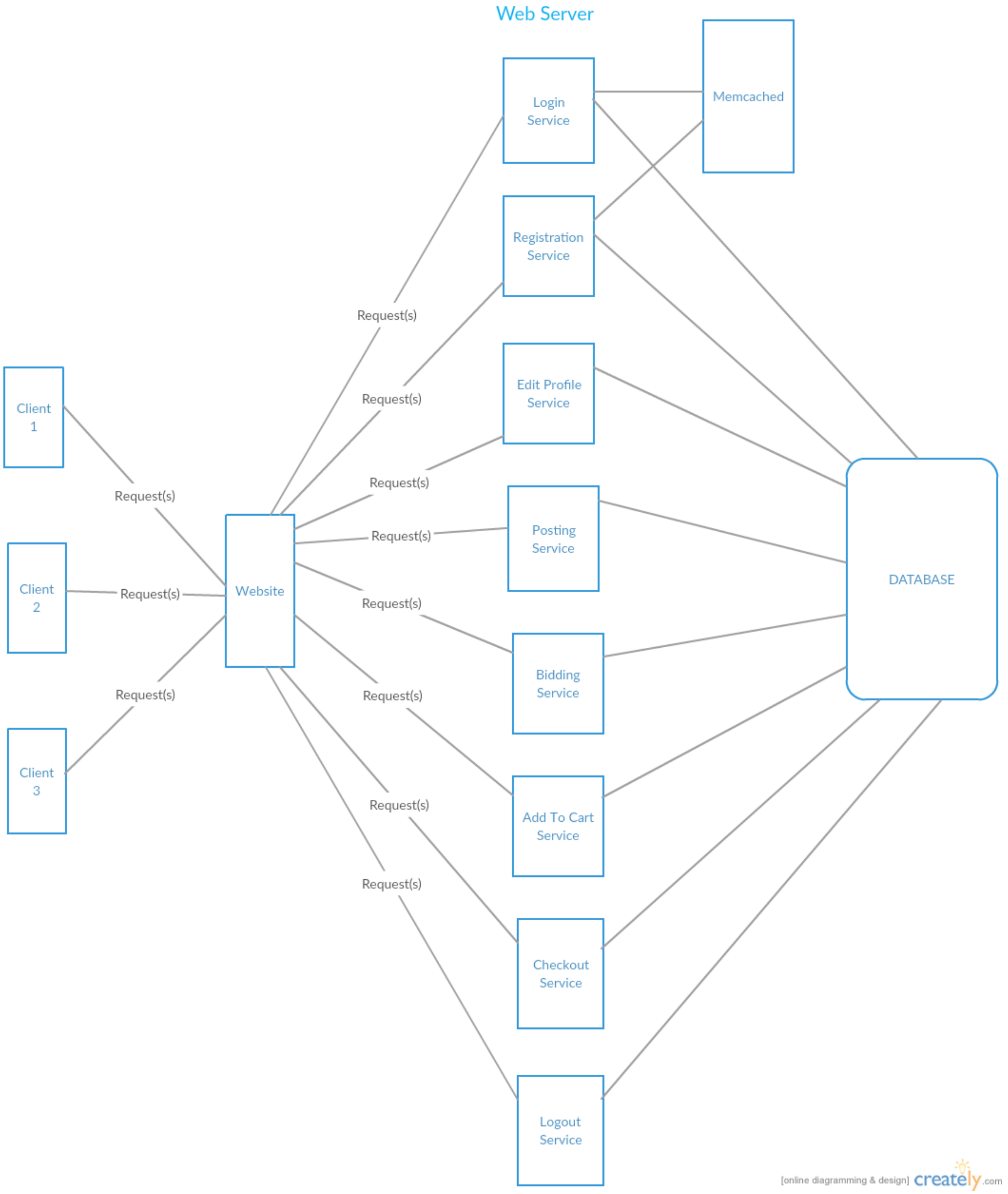
ARCHITECTURE DIAGRAM:



Implementation Technologies:

The objective of this project is to develop an online book store. When the user types in the URL of the Book Store in the address field of the browser, a Web Server is contacted to get the requested information. In the Jersey Rest Framework, jersey web service acts as the Web Server. The sole task of a Web Server is to accept incoming HTTP requests and to return the requested resource in an HTTP response. The first thing web service does when a request comes in is to decide how to handle the request. Its decision is based upon the requested file's extension and given path. For example, if the requested file has the /path extension, it will route the request to be handled by rest controller.

Jersey REST service:

In this project, the jersey REST service is used as client and server side implementation. The developing RESTful Web services that seamlessly support exposing your data in a variety of representation media types and abstract away the low-level details of the client-server communication is not an easy task without a good toolkit. In order to simplify development of RESTful Web services and their clients in Java, a standard and portable JAX-RS API has been designed.
Jersey framework is more than the JAX-RS Reference Implementation. Jersey provides it's own API that extend the JAX-RS toolkit with additional features and utilities to further simplify RESTful service and client development. Jersey also exposes numerous extension SPIs so that developers may extend Jersey to best suit their needs.
This service is used in all client and server side modules to make the uniformity.

MySQL Database:

In this project, MySQL is used as the backend database. MySQL is an open source database management system. The features of MySQL are given below: · MySQL is a relational database management system. A relational database stores information in different tables, rather than in one giant table. These tables can be referenced to each other, to access and maintain data easily.
· MySQL is open source database system. The database software can be used and modify by anyone per their needs.
· It is fast, reliable and easy to use. To improve the performance, MySQL is multithreaded database engine. A multithreaded application performs many tasks at the same time as if multiple instances of that application were running simultaneously. In being multithreaded MySQL has many advantages. A separate thread handles each incoming connection with an extra thread that is always running to manage the connections. Multiple clients can perform read operations simultaneously, but while writing, only hold up another client that needs access to the data being updated. Even though the threads share the same process space, they execute individually and because of this separation, multiprocessor machines can spread the thread across many CPUs as long as the host operating system supports multiple CPUs
MySQL is connected to hibernate through JDBC for the execution of database queries.

ORM Framework:

- The ORM framework used for this project is the Hibernate framework. Hibernate is an Object-Relational Mapping(ORM) solution for JAVA. Hibernate maps Java classes to MySQL database tables and from Java data types to SQL data types for easy accessing/ storing of data.
- Provides simple APIs for storing and retrieving Java objects directly to and from the database.
- If there is change in Database or in any table, then the only need to change XML file(Hibernate.config.xml) properties.
- Hibernate does not require an application server to operate.
- Provides Simple querying of data.

3. Functionalities

a. Login:
b. Registration:
c. Edit Profile:
d. Last logged in time and location:
e. Post Item:
f. Bid Item:

a. Login:

- User can login with his credentials.

b. Registration:

- User can register to the website by providing all the details.
- User can create the login credentials along with credentials.

c. Edit Profile:

- User can modify his details whenever he need to.

d. Last logged in time and location:

- User can view his last login details, i.e. his last login date, time and ip location.

e. Post Item:

- User can post the book he is interested to buy.
- User will be given option to post book title, edition, author and any additional comments.
- One user can do multiple posts.

f. Bid Item:

- User can Bid for the post he wants to.

- One user can do multiple bids.

g. View All Posts:

- User can view all the posts available to bid.

h. Search for Posts:

- User can search for required posts to bid.
- User can search with the following parameters.
- Book Title
- Book Category
- Both together

i. View Bids:

- User can view bids on his posts.
- User can view bids on others posts.

j. Add bids to cart:

- User can add the bids on his posts to cart.

VARIOUS WEB SERVICES AVAILABLE :

LOGIN SERVICE:

This service enables the user to login to the system. It checks whether the user already exists or not. It checks the cache and if there is a miss on cache, it checks the database. If user exists, it redirects to a page where all the details of the user are displayed along with the last login information of the user. If not, it asks the user to Register.

REGISTRATION SERVICE:

This service enables the user to register himself with the store. Here all the users must have a unique username. This service checks whether if the username exists already. If yes it asks the user to register with a different username. If the username did not exist before, the user is registered to the store and all his details are saved.

EDIT PROFILE SERVICE:

This service enables the user to edit his details at a later point after he registered for the store. He can edit all his details except for username and the password.

POSTING SERVICE:

This service helps the user to post for the items he needs by filling the details of the item he wants. He can any time login and modify his posts.

BIDDING SERVICE:

This service helps the user to bid for any of the services that are available at the store. User can specify his bidding amount which the user who posted it can see and accept/reject the bid.
It also provides functionality to allow the user to view his bids and modify them.

ADD TO CART SERVICE:

This service enables the user to save all the bids he liked in the cart. User can anytime modify the items in the cart. He can change the quantity of the items in the cart and can delete the items at a later point of time.

CHECKOUT SERVICE:

This service enables the user to finalize the bids he had selected. He can get the total price of the bids he selected for payment and he is redirected to a payment page. He can then fill in the necessary details and pay for those bids. He then receives a confirmation email about the checked-out order.

LOGOUT SERVICE:

This service enables the user to logout safely from the store. It also stores the timestamp of the logout along with the location.

PROBLEM ENCOUNTERED:

1. The configuration of eclipse for jersey along with hibernate was the problem.
2. For the CORS filter we faced issue for cross origin conflict. The problem is solved by adding cors filter in tomcat.