Three-tier Database Application:
Daily Deals Shopping

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Description

We propose a web-based database application that will be a shopping website allowing users to browse and purchase the daily deals on the site. Our application will only allow customers to a limited selection of curated items every day. Features include: user login, sign-up, user authentication, sessions, client-side/server-side validation. The stakeholders for this application are any consumers who shop online, this project is important to them because our project will provide a clean interface to shop for unique curated products with no frills or distractions. The appeal of this website is that is a quick place for shoppers to see the daily deals and quickly purchase items they want or check in the next day to see what is fresh in stock. This will enable us to develop a sleek and fast product for the customers.

Functional Requirements

Users will be able to access our application through their web browser. The application will allow users to sign-up and will store the username & password hash in a table inside the database. If the user wants to log in, then we can query the corresponding login information and authenticate the user. Users will be able to select products they would like to purchase and continue through the checkout process. The following features will be supported on our website:

I. Account Registration
   A. This feature will allow any person to create an account with a valid email. Registration will require first name, last name, email, and password. These items will all be stored in the database and used for user authentication. The password will be saved as a hash in the database.

II. Log in system
   A. Customers will be able to securely log into the website by entering their email and password, the login information will be securely sent using SSL when the final project is launched.
   B. Emails will be validated to ensure they are formatted correctly.
   C. Passwords will have a minimum requirement of 8 characters, and at least one number and one symbol

III. Browse products
   A. Customers will be able to browse items from our main page. They will be able to view detailed descriptions when they click on the items.
   B. Everyday there will be 10-20 items to browse. This enables shoppers to quickly visit our site and see what deals there are today and then quickly purchase the desired items if wanted.

IV. Product detail page outlining the product description
   A. Reviews
      1. Each product will feature a section allowing registered customers to

leave a review with a thumbs up or thumbs down to go along with their review. The site will then calculate which percentage of users recommend the product.

2. The percentage of people who liked the product will be displayed under the product name

B. other information regarding the product

1. Product dimensions
2. Product specification
3. additional images

V. Shopping cart

A. In the shopping cart, there will be items' name and quantity as well as a total price.

B. The shopping car will also show any available sales and promotions a customer has

VI. Checkout and confirmation page

A. At the checkout page, customers can make adjustments to quantities of the items, fill out payment & delivery information, and submit order. Customers will receive an order#.

B. Customers will have the option to save their delivery information for future use.

VII. Order history page

A. From the order history page, customers can view their previous orders, including items' name, quantity, and total price.

VIII. Account management page

A. A simple account management page will provide quick access to common features such as:

B. changing password

C. changing address

D. changing email address

E. and other account-related settings.

IX. Wishlist feature

A. Customers will be able to wishlist items they would like to buy in the future. This will enable them to purchase the item at a later time. The list of items on a customer's wish list will also be stored in the database. Wishlisted items can only be purchased when the item is in stock.

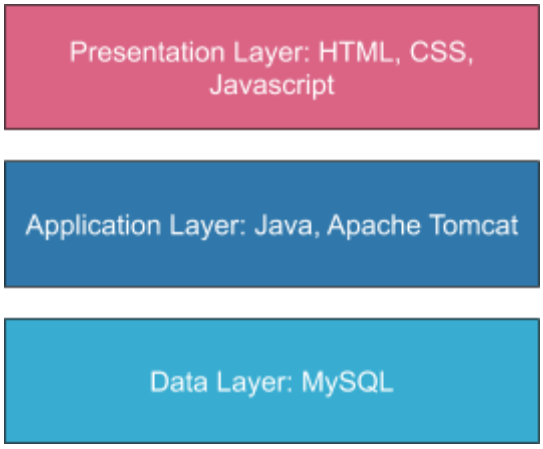
X. Orders to be filled (Business view)

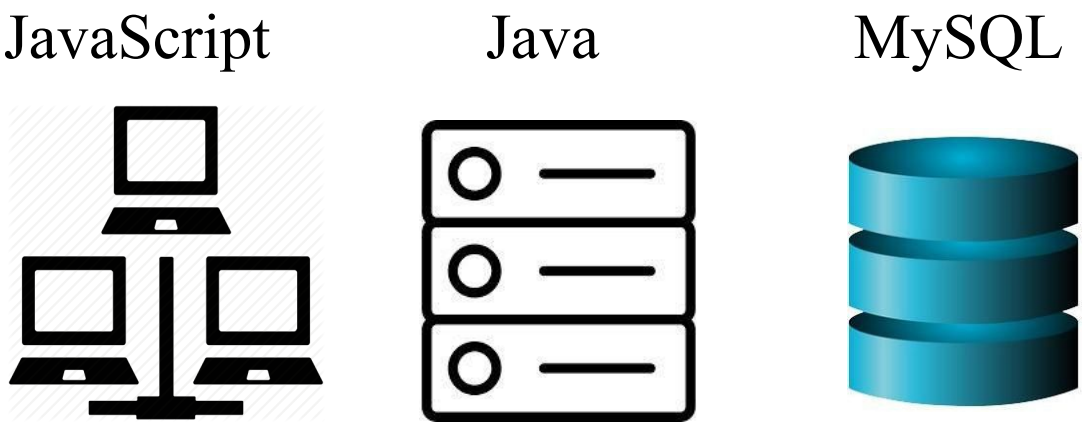
A. The software will support a view of all the orders that have been placed and need to be filled.

B. Each order page will display what the customer purchased, the quantity of items, as well as the customer's shipping address

System Environment

The backend of the application will be developed using Java which is utilized in the Application Layer. The Application Layer will communicate with the Data Layer using JDBC. For the middleware "business" tier we will use Apache Tomcat/Jetty to deploy our webserver. Lastly, we will use MySQL/PostgreSQL for the database itself in the data layer.





System Environment

- Application Languages: Java 8, JavaEE 7, HTML5, CSS3, JavaScript 1.8.5, XML, MySQL
- Software Used: Apache Tomcat
- RDBMS: MySQL Community Server 5.7.19

Non-functional issues

We will use HTML, CSS, and Javascript and React to build the front end of our website to be displayed in the browser. For user authentication we will use SSL (when the website goes live) and only store the hash of the user's password so that if the database gets hacked, the user's passwords are safe from attackers. This will be the only access control as we would like anyone

to be able to buy products from our website as long as they create an account. Users will be authenticated with their username and password combination.