**Component Outline:**

1. **JSP:**
   * Checkout.jsp: This page is the presentation for when user clicks on check out from the main page.
   * Index.jsp: This page is the first page the user will see when they open the website. It contains link to register or login to start shopping. It also shows a table of product for observing purposes
   * Login.jsp: This is the page where user login
   * Main.jsp: This is the main page that user can select product, add to cart and proceed to check out.
   * orderDetails.jsp: This is the page to show the details of the order that user has paid
   * register.jsp: This is the page where user register a new account
2. **Servlet:**
   * CartOps: This servlet provides functionalities for when users add product to their cart, remove, clear their cart and pay. It will redirect user to the appropriate destination.
   * UserOps: This servlet provides functionalities to handle login, logout, register calls.
3. **Application Listener:**
   * ShopListener: This listens for when session is destroyed to store user’s cart, and listen for when attributes are added to the session to load the cart back for user
4. **Model:**
   * ConnectionPool: provides connection to other classes.
   * OrderItem: stores the name, price and number of Units of an orderItem in the cart.
   * OrderProduct: stores the productId and quantity. This class follows the structure of OrderProduct table in the database.
   * Product: represents a product of the store. It contains id, name, unit price and stock level
5. **Stateful Session Bean:**
   * CartSFSB: consists of an ArrayList of OrderProduct. This will contains products that users add to their cart. It also provide methods to add, remove, size, clear, get and calculate the total number of items inside the cart.
6. **Stateless Session Bean:**
   * CartSLSB: provides functionalities to save the cart to the database, load the cart from the database according to username.
   * OrderSLSB: provides functionalities to record the order to the database, update Order Items to the database and retrieve the list of order items based on order id.
   * ProductSLSB: provides functionalities to get the list of all products and update the stock level of products.
   * UserSLSB: provides functionalities to add new user to the database, check if the registering username is unique, and validate login information