

Abstract User	
Administrator, Shopper	
Browse Search	Store Product
Name Password ID Store	

Administrator	
User	
Add Product Req. Modify Product Req. Add Category Req. List Categories	Store Product

Shopper	
User	
Add to cart Remove from cart View Cart Check Out Buy It Now View Invoices	Store Product Invoice
Cart Past Invoices	

Product	
Modify product	Category
Image ID Description Category Available Quantity Stock in Dist. Center Price	

Store	
Add user Add product Create new user Login user Logout user Authenticate user List Products Modify Product List Categories Add Category Modify Category Authenticate Purchase	Administrator Shopper Product Category DBManager
User List Product List	

Invoice	
Order ID Order Timestamp List of products Quantity per product Price per product Shipping Costs	Product Graph City

Category	
ID Number Name	

DBManager	
Display current users, products, categories, and cities Update existing user, products, and categories, and write to CSV Add User to CSV file Add Product to CSV Add Category to CSV Add City to CSV	Store User Shopper Administrator Product Category Graph City

Graph	
Calculate shortest distance to Distribution centres	Store City
Calculate shortest route and cost for route	
List of cities	

City	
Display edges for each city	Store Graph
Name Distribution boolean	