

The ECLECTIC mail-order company would like to provide a means for its customers to shop and place orders over the Web. ECLECTIC provides a wide range of products, such as thing-a-ma-bobs, deely-bobs, and widgets.

ECLECTIC customers have typical information: name (last name and first name), address (street, city, state, and zip code), phone number, and email. To place an order, a customer must be a registered user having a unique login name and password.

The customer shops the online store by category, where a category has a unique code and description. Each type of item in the online store belongs to exactly one category. For example, books might represent one category, while electronics and sporting goods might represent other categories.

An item type is described by a unique item number, a name, and a price and has an associated graphic for display on the Web page. Since inventory items may come in different colors and sizes, a customer selects a specific inventory item by also specifying its color and size. Inventory items are represented in the database by a code that is unique within the item number. The database also records the current quantity in stock of that inventory item for a given color and size. For example, a thing-a-ma-bob is an item type in the electronics category. A thing-a-ma-bob, however, comes in different sizes and colors. The online store may have 50 small, green thing-a-ma-bobs in stock and may have only 30 large, blue thing-a-ma-bobs in stock.

A customer places inventory items in a shopping cart, specifying the quantity of that item being placed in the cart. There is a unique number associated with the cart, along with the date and total price, which is calculated as the sum of multiplying the price of each inventory item in the shopping cart by the quantity ordered. The contents of the shopping cart can be updated until the customer confirms the cart contents by placing an order. The quantity of each item in the shopping cart can also change before the customer places the order. When an order is placed, the shopping cart is reclassified as an order that is ready for shipment. The price of each shopping cart item at the time of the order is recorded for historical purposes and for calculating the final total price of the order, which is the sum of multiplying the price of each inventory item in the shopping cart by the quantity ordered.

A customer can have at most one shopping cart, but many orders. A shopping cart and an order are associated with exactly one customer. When a shopping cart becomes an order, the shopping cart is emptied to prepare for a future shopping session. Information about customer orders is maintained in the database for a period of three years.