WebBooks: System Introduction

The case study will be WebBooks, a World-Wide-Web based book distributor, similar to Amazon.com™ (http://www.amazon.com). Think of this case study as a preliminary version to demonstrate the basic concept, much of the full functionality of a real system is left out so we can finish the case study in a reasonable time. Examples of functionality intentionally left out of this case study include:

Creating, deleting, modifying customers
Creating, deleting, modifying publishers
Creating, deleting, modifying books
Partial orders (both to the customer and from the publisher)
Promising delivery dates to the customers
Returned merchandise and refunds
Credit card vs. cash payment
And much, much more

WebBooks, Inc. has a mid-range UNIX system with a 40 Gig hard drive. They're pretty sure this is big enough to handle the traffic for the version 1 demonstration, but they will need the software to be written in Java in case they move to a different machine later on.

WebBooks customers will use a web-based browser to examine the list of available books and place orders. Customers will also be able to check on the status of their orders as well as cancel orders (up to the point that the order has been packed and shipped, in which case the cancellation must be ignored).

People in the WebBooks warehouse will interact with the system (also web based) to find which orders should be packed and shipped, and to tell the system that some customer's order has been packed and is on the dock ready to ship.

The managers will use the system, through dedicated terminals on their desks, to define the list of books that will be offered for sale. They will also need to maintain the list of publishers that the titles are obtained from. The manager's most important use of the system is to obtain the monthly inventory report and the monthly sales/profit report.

When a customer orders some books, the system needs to record that order. The order will consist of information like date ordered, a ship-to address, and the quantity of each book ordered. The order will be packable by the warehouse people when the stock on hand for each title in the order is greater than the quantity of that title ordered. Of course, the order can't be packed until there is a sufficient amount of stock on hand for each title ordered (remember, no partial orders in this preliminary version).

When a warehouse person marks an order as packed and ready for shipment, the stock on hand for each title ordered needs to be reduced by the quantity that was packed. If the stock on hand falls below the reorder limit for that title, then a replenish order is created

for the publisher of that book. WebBooks will specify a reorder amount for each book, that's the quantity to order from the publisher.

This next part is a bit complicated. They want the system to hold replenish orders for a day, anticipating that other titles may need to be ordered from the same publisher. If more copies of some title in the replenish order are packed during that period, we go ahead and add an equal amount to the quantity being ordered from the publisher. At the end of that 24 hour period, the replenish order (which includes the list of all titles to be replenished from that publisher) is eMailed to the publisher (they'll keep the publisher's eMail address in the system).

The warehouse people will use their web GUI to tell the system when a replenish order was received. When this happens, the system needs to go through the order and increase the stock on hand for each title by the amount ordered (remember, no partial replenish orders in this version). They will use the same GUI to tell the system when a batch of customer orders have been picked up by the shipper.

Publishers will send eMail to the address notice@webbooks.com using the following format to tell the system that a book has just been declared out of print:

> Subject: out-of-print
> Contents of the message: book title

The publisher's computer systems can format the message so that this system will never have to worry about spelling errors and the like. Once a title goes out of print, WebBooks managers will manually go through the orders and figure out how to handle them based on how old the orders are, how many copies were ordered, and how many are left in stock.

Customers should be able to browse by Title, Author, and Subject. This needs to be a glitzy page with lots of bells and whistles to make the customer want to buy books from WebBooks. They'll put you in contact with their advertising firm because the agency has some ideas on how the pages should look.

The warehouse people will need their GUI to be as absolutely simple as possible. Likewise, an easy-to-use interface for the managers is also a definite requirement. And since the managers are used to the format of some existing monthly sales and profit reports, you'll need to use exactly this same format (assume you will get a copy real soon).