Same table or different table?

Asked 3 years, 3 months ago   Active 3 years, 3 months ago   Viewed 206 times

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My application tracks purchases and sales of inventory. I can't decide if I should use separate tables with auto-increment or the same table with a distinguishing type field with a manual auto-increment id. The tables would store close to identical data. I'm worried that combining the two tables would make it harder to visualize inventory movement in the future. I understand that this is purely for human comfort but I'm not sure if there are other performance related issues as well. I would like to hear opinions from both ends.

Suppose I decide to combine my sales invoice and purchase order tables into the same table, there is a single difference in the columns required - purchase orders store the tax paid while sales invoices use a bool on whether the order is taxed. I have two options:

1. Use two fields - one bool and one decimal

2. Use the same field and type cast the values on the application level

Does anyone know if the second would cause more problems?

Thanks

mysql

asked Mar 28 '17 at 23:30

Joshua
117 ● 9

Not really a question suited for stack overflow. But when you look at ERP systems they typically have an inventory transactions table that includes purchases and sales. They then have separate tables for the sales order and purchase order. So to answer your question put the inventory transactions in the same table and keep your order tables separate. – David Lee Mar 28 '17 at 23:33 ✎

That's what I was leaning towards as well but I looked at the table structures and realised they have the same fields. In the spirit of RDBMS, I was wondering if storing the transaction details in the inventory table is required duplicate data (the same info can be obtained from the purchase/sale line items)? PS: Is there any place to look up the DB structures of such ERP systems? – Joshua Mar 28 '17 at 23:47

Keep them separate as you can have multiple inventory transactions that occur from a single sales/purchase line item. For example partial sale shipments or partial purchase order receipts. Not sure about any DB structures you can look up. My experience comes from working in many ERP systems. – David Lee Mar 28 '17 at 23:52

This is not a simple question to answer. Purchases and sales may come in large chunks, skids, boxes, crates of multiple units. You probably need to study other inventory management systems to see how they track this sort of thing and cherry-pick the best ideas for your design. – tadman Mar 29 '17 at 0:02

Forgive me if I'm not getting it but can't you just add bool flag for the line items that haven't been shipped for these partial sale shipments? – Joshua Mar 29 '17 at 0:04

1 Answer

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If you're using a single-table design you probably need two columns, one for each purpose, where some records may use column A, and some column B, but the rest are shared.

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The real question is if a purchase order and an invoice are really the same thing or not when speaking in terms of data and relationships. Normally a purchase order is related to an invoice, but an invoice may not have an associated purchase order. In some systems you will have a complex arrangement between multiple purchase orders and multiple invoices, it depends on the nature of what's being sold and how it's packaged.

If you're dealing with fairly granular things, like large, expensive items that can be tracked indidually, then your system can get into a lot of detail. If it's tracking inexpensive items sold in large quantities it gets pretty hard to manage that. Things get even more complicated if you're dealing with things that are made-to-order.

I'd do a lot more research about the types of situations you're likely to encounter, order those by probability, and then test your schema against the ugliest cases you're likely to encounter.

answered Mar 29 '17 at 0:05

tadman
177k ●20 ●202 ●229

In terms of data storage, I can safely say that the purchase order (not the line items) and the sales invoice can be stored in the same table. The problem comes when trying to visualize the flow without writing the corresponding application to sort the data (it's difficult to picture the flow for the single table as opposed to two separate tables with the joining inventory table). You are right in that I'm tracking larger individual items and can use the inventory table as a joining table, matching the purchase line item to the sale line item. – Joshua Mar 29 '17 at 0:15

If you're dealing with things that have serial numbers, for example, like an expensive fork-lift or a car, then you can link those items directly to invoices and purchase orders, or via line-items. The line-items issue can be a bit messy if not carefully considered, but I'm sure you can link these up neatly if you impose some reasonable constraints on how orders and invoices can be constructed. – tadman Mar 29 '17 at 0:17 ✏

These things can get crazy complicated when you're dealing with returns, loaners, refurbrished equipment, and so on, as then the product may have multiple owners over its lifetime and could potentially show up on any number of invoices. – tadman Mar 29 '17 at 0:20

@Joshua By definition a purchase order and a sales order are different. Sales orders require a customer and purchase orders require a vendor. Invoice vs vouchers. Shipped dates vs received dates. Shippers vs Receivers. Various terms. Sales orders can also be created from quotes. The two really are different and without knowing every single use case it would be hard to give you advice. In general the two should not be in the same table. – David Lee Mar 29 '17 at 0:23

1   @Joshua That is just getting the data. Posting new records also requires different validation of customers and vendors, date fields, etc. – David Lee Mar 29 '17 at 1:04