

How to Implement the Commodity Publishing System in Ecommerce Platform

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Abstract. The Commodity publishing system is one of the most important software component of the ecommerce platform system. A simple and practical publishing system is necessary for the ecommerce platform system blooming everywhere. We describe how to design a commodity publishing system, including the system design features, the database design and software implementation. The method is helpful for software engineers.

1. Introduction

An ecommerce platform includes two core systems, namely, the mall system and the commodity management system. Consumers can choose and buy commodities in the mall system. The foundation of the mall system is the commodity management system [1]. The commodity publishing system is of great importance in the commodity management system, which belongs to a module of modular design of ecommerce platform system [2]. This article describes how to design a commodity publishing system, including the design features of the commodity publishing system, the database design and the implementation of the commodity publishing system [3-4]. The publishing system we designed is simple and practical. It could be used in general development of ecommerce platform systems.

2. Design Features of the Commodity Publishing System

The commodity publishing system described following has four distinctive designs.

(1) This system can not only release domestically produced goods, but also publish imported goods. When the goods are released, you need to choose the "Is import" attribute. If you click Yes, you need to fill in the additional import attributes, including the presence or absence of the country of origin certificate, the customs clearance status, the import port, the customs declaration number, the delivery time and the import of the import documents.

(2) A drop-down list or a multi-select box. If the seller user feels that the attribute selection value provided by the system cannot meet its needs, you can customize the added attribute. For the drop-down list, if the existing value of the system is insufficient to meet the user's needs, the user can select "Other". After the selection, an input box will appear next to the drop-down list, and the user can input the attribute value that he wants to select in the input box. The same is true for the multi-box function. Click the "Add Attribute" button after the checkbox to allow the user to customize the attributes that you want to select.

(3) The system has designed two kinds of quotation methods, one is to quote according to specifications, and the other is to quote according to quantity to meet the different needs of different types of goods. For example, the mobile phone may be quoted according to the specifications, and the



mobile phone price of the 4G memory mobile phone and the 8G memory mobile phone are different. Although the different sizes of clothes are the same price, purchasing 50 pieces may get more discounts than buying 10 pieces of clothing. At this time, you need to quote according to the quantity.

- Specification quotation. The user needs to fill in the batch, that is, this product can be purchased from a few pieces, for example, one piece, and need to fill in the price corresponding to different specifications, as well as the stock and weight of different specifications of the goods.

- Quantity quote. The user needs to fill in the price range, the price of each price range, and the item number, inventory, and weight of each specification.

(4)The system not only supports user-defined values of added attributes, but also supports user-defined addition of up to three attributes, custom attribute names and attribute values.

3. Commodity Publishing System Database Design

The database logic design of the commodity publishing system consists of six tables, including cate_id, cate_attr, attr_id, attr_value, goods, goods_attr. The cate_id table stores the classification of goods. The categories of goods in this system use three-level classification. The first level is a large category, such as daily necessities, office supplies, etc., and the second category is a small category subdivision under a large category, for example, there are secondary classifications such as clocks and cups under the department store category. The third-level category is specific to a certain commodity. For example, there are specific categories of cups, such as thermos cups and coffee cups. The cate_attr table stores the class attributes of each specific three-level class, that is, information about which attributes need to be added when the item is published. The attr_id table stores all attribute names and attribute ids. The attr_value table stores the values corresponding to the attributes under each category. Here, the pre-selected values of the attributes are stored, and which value is selected when the user adds the items is stored in the goods_attr table. After the user adds the commodity information in the system, the data is mainly stored in the goods table and the goods_attr table. The goods table stores the public information of each commodity, including the category number, product number, item number, inventory, price, etc., and the goods_attr table stores the value of the unique attribute of each item, including the product number, attribute id, and value. The conceptual design of the released commodity system is shown in Figure 3-1 and Figure 3-2.

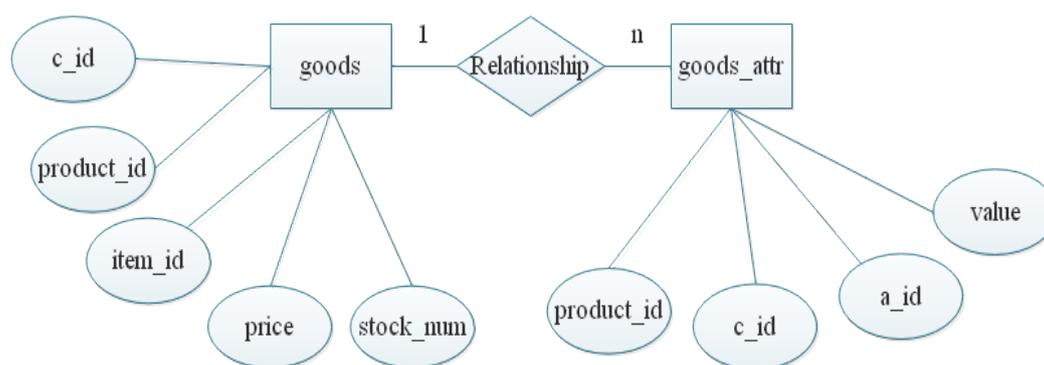


Figure 3-1. Commodity storage ER diagram

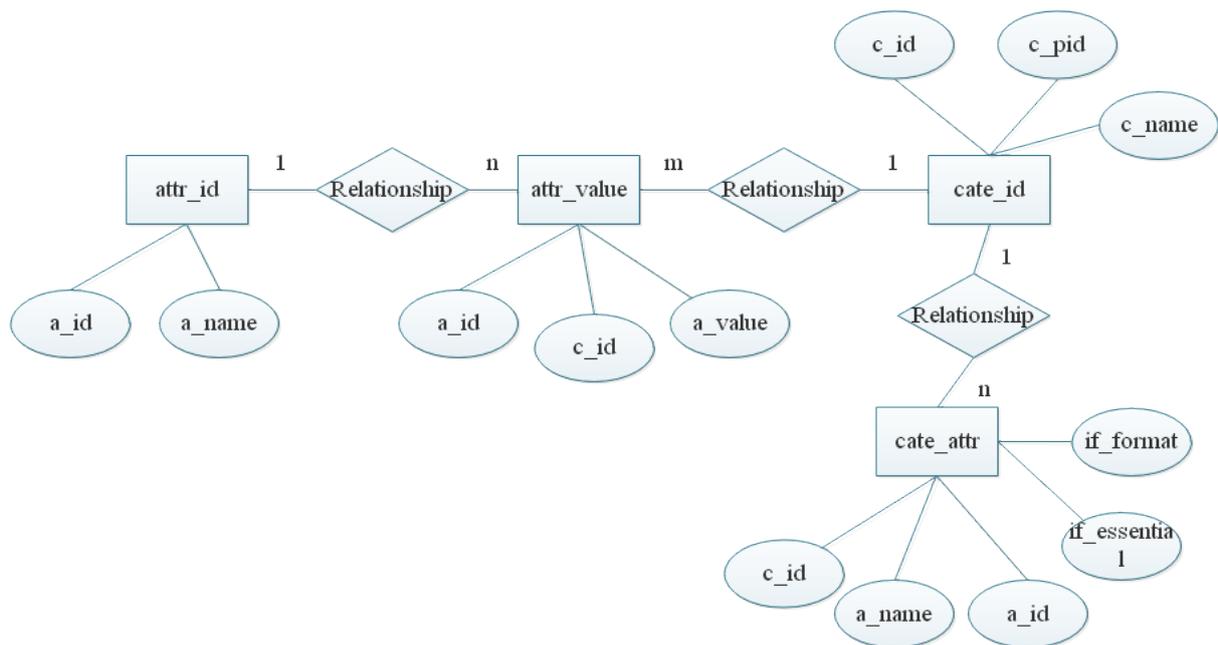


Figure 3-2. Commodity publishing ER diagram

4. Commodity Publishing System Implementation

The foreground of the system adopts the Bootstrap framework, the background uses Java language, the data storage uses MySQL database, and the development framework used is Spring. Spring MVC and MyBatis framework. The Spring architecture can be divided into Dao layer, Service layer and Web layer. The database and business logic and presentation layer are separated, high cohesion and low coupling, which increases the flexibility of design, improves the reuse rate of code, and enables the system to open to the expansion [5-6]. The MyBatis framework encapsulates the code for database connections, enabling users to interact with the database more efficiently. The system page uses the FreeMaker template engine to speed up page rendering. System login and privilege management use the Spring Security framework, which can sets different system roles, such as buyer users, seller users, administrators, etc. Different roles have different access rights to the system [7-8]. The specific implementation is as follows.

4.1. Select the Category of the Item You Want to Publish

The first choice is to choose the first category, and then the second category. After the first two categories are selected, the third category is specific to a small commodity category. After selecting the three-level category, you can click the button with Next to fill in the details. If you don't know which category of the commodity you want to publish, you can enter the keyword of the commodity category to be published in the search field, click the search button, you can directly search for the third-level category, and after searching for the result, select the corresponding class. For example, select the first category of office stationery and the secondary category of writing stationery and the third category of pens, as shown in Figure 4-1.

Figure 4-1. Select the commodity category page

4.2. Fill in the Commodity Details

After selecting the category, fill in the details of the commodity of a certain category, and the attribute marked with an asterisk is a required attribute. The following is an example of publishing a pen to introduce the implementation of the system, as shown in Figure 4-2.

Figure 4-2. Fill in the commodity details page

For the four design features given earlier, we forward a detailed implementation here.

● Fill in import attributes for cross-border goods. If you need to publish imported goods, if you choose “Yes” in the import attribute, there will be import attributes that need to be filled out, as shown in Figure 4-3.

填写进口属性: * 有无原产国证: 有 无

* 货物清关状态:

* 进口口岸:

* 报关单号:

报检单号:

* 发货时间:

* 进口单证上传:

1、上传的图片将展示给买家，请按要求上传。
 2、食品请提供卫检证书，非食品请提供报关单。
 3、图片最佳尺寸790像素×750像素；证书名称、产品名称清晰可见；图片正面展示，切勿倾斜横放或者倒置。

Figure 4-3. Fill in the import properties page

● Customize the drop-down list property and the value of the checkbox. For example, for the material property, if the user feels that the material provided by the system is not the material he wants, he can select other first. After selecting other, an input box will appear next to the drop-down box of the material, and the user can fill in the actual material of the product in this input box. The multi-select box can also be customized to add attribute values. Click the Add button to customize the value of the added attribute

● Two quotations are implemented. If you choose the specification quotation, you need to fill in the price under different specifications.

If you choose to quote by quantity, you need to fill in the correspondence between the price and the quantity range. Figure 4-4 shows that at least three pens can be purchased, the unit price of more than or equal to three pens less than 10 is 35 yuan, the unit price of more than or equal to 10 pens less than 50 is 33 yuan, and the unit price of more than or equal to 50 pens is 30 yuan.

* 报价方式: 按数量报价 按规格报价

数量: 个 个 个

价格: 元 元 元

颜色	规格	货号	库存量	重量(kg)
白色	圆形笔头	<input type="text"/>	<input type="text"/>	<input type="text"/>
粉色	方形笔头	<input type="text"/>	<input type="text"/>	<input type="text"/>
马兰花色	圆形笔头	<input type="text"/>	<input type="text"/>	<input type="text"/>
粉色	方形笔头	<input type="text"/>	<input type="text"/>	<input type="text"/>
粉色	圆形笔头	<input type="text"/>	<input type="text"/>	<input type="text"/>
粉色	方形笔头	<input type="text"/>	<input type="text"/>	<input type="text"/>

Figure 4-4. Quantity quote realization

- To customize the attribute name and attribute value of the commodity. Click the "Custom Add Product Attributes" button to customize the added attribute name and attribute value.

In addition, the system provides a rich text box that allows the user to customize the details of the commodity. At the bottom of the page, the user can also choose which of the custom store categories. Finally, click on the "Add Item" button to enter the published commodity information into the system.

5. Conclusions

The methods of implement the commodity publishing system in ecommerce platform are from the real software engineering. Maybe there are better methods. We hope the article will be helpful for the new engineers who are trying basic development.

6. References

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