Editor's Note: There are a variety of products sold on e-commerce platforms, and buyers can read the attributes of these products to understand their information and determine whether they need them and whether they are suitable for them. The number of products in e-commerce platforms is huge, and the attributes of each product are very different, so it is important to design a set of reusable attribute management functions. In this article, the author provides a detailed overview of attribute management for e-commerce backend design.

In the last article we introduced the product category function, when introducing the back-end category management, there is an attribute setting function left behind, this article we will sort out this function.

Before we introduce the specific function, let's understand what is an attribute and what is an attribute value?

An attribute is a description of the characteristics of something, and an attribute value is a specific descriptor.

For example: when we write a resume, we have to fill in the following items: name Zhang San, gender male, age 20 years old, height 170cm, etc.; and then for example, the salesman will recommend clothes for customers: this dress is cashmere material, the price of 2000 yuan, etc..

The gender, age, height, material, price is the attribute, and male, 20 years old, 170cm, cashmere, 2000 yuan is the corresponding attribute value.

Through the description of these attributes and attribute values we can understand the specific information of the person and the clothes, when the more attributes and attribute values described, the clearer the image of the thing shown in our brain.

Similarly, the e-commerce platform sells a variety of goods, and we can understand its information by reading the description of the attributes of the goods. The number of products in the e-commerce platform is huge, and the attributes of each product are very different, so it is important to design a set of reusable attribute management functions.

First of all, let's find a few products and see what features and correlations are between their attributes.

The following is a comparison of several different types of commodities.

I. Data analysis

By comparing the attributes of the three products mentioned above, we can get several results.

Different goods have some of the same attributes, such as title, brand, category

Different goods have their own unique attributes, such as cell phones have memory, shoes have size, watches have movement

Different products have the same attributes, where the values of the attributes may be the same, e.g. in the color attribute cell phones and watches both have black

There are some attributes involved in the selling price of goods, such as the memory of cell phones, the price of different sizes of memory is not the same.

For the attribute values, some of them are not regular and can be filled in randomly, such as title, product introduction; some of them are regular and their values are usually limited, we can sort them out one by one, such as the use of the crowd (women, men, all), memory size (8G, 16G, 32G, 64G, 128G, 256G)

Some goods can have a lot of attributes, and some have very few. Such as electronic products, cars, etc., their parameters usually have dozens of items, while stationery supplies they are very few.

Second, the data classification

Through the above data analysis, we can see that the attributes of different commodities are still very different, and the system is designed to facilitate management by dividing them into four categories according to their usage.

Basic attributes: common attributes that all commodities have, such as title, brand, category, etc.

Sales attributes: attributes that affect the sales price of goods, different types of goods sales vary, such as the color of the phone, memory, etc.

Search attributes: Attributes that are involved in the search of products, such as title, brand, category, etc.

Unique attributes: attributes that are unique to different products, such as the population of the shoe, the material of the shoe upper, the movement of the watch, etc.

In the above categories, it can be found that some attributes are not used in a single way, such as brands and categories can also participate in the search in addition to the display of basic information.

In the functional design, the basic attributes and sales attributes have clear and enumerable attributes, so each has a corresponding function to maintain the data separately.

The search attribute is an application of the data, so part of its functionality is written in the code logic, and another part is set in the unique attribute.

For the unique attributes, its properties are mainly related to the product, so we need to be designed separately according to the different products, the following we do a functional analysis of the unique attributes.

Functional Analysis

1. Attributes related to categories

Although the unique attributes are related to commodities, there is a common characteristic that all the commodities in the same category have basically the same special attributes, and for this characteristic, we usually bind the special attributes of products and categories together.

When the product sets the corresponding category in the base attribute, it can be associated with all the special attribute configurations that have been bound.

2. Attribute inheritance

In the previous article on category management, we know that categories are usually maintained in a tree structure, and we analyzed above that attributes and categories are bound together, so in order to avoid adding attributes repeatedly, an inheritance function is designed, and the subset of category attributes will inherit all the attributes bound by the parent category by default.

Here is a digression, that is, this inheritance function itself is good, but because of the internal logic is more complex (involving data recursion, de-duplication, etc.), the development costs and later maintenance costs are relatively large.

So I usually use a compromise solution, when adding a subset of classes, the parent class will have a copy of the properties bound to the subset of classes, so that the subset of classes can also maintain their own properties separately, and then only need to do less adjustment to achieve the same effect as inheritance, and the development and maintenance is much simpler than the inheritance method.

3. Attribute groups

As some products have a wide range of attributes, such as electronic products, cars, etc., in order to facilitate the user to browse the comparative data, the attributes are usually managed in groups.

4. Whether to participate in the search

In order to search the user's products more accurately, in addition to the basic attributes (such as title, brand, category) participate in the search, some unique attributes also participate in the search, such as the resolution of the cell phone, the number of cameras, the material of clothing, patterns, etc.

5. Form maintenance method

For different attributes, the corresponding attribute values are added in different ways, in order to keep the data as neat as possible, different maintenance methods will be used according to the use of scenarios, the common maintenance methods are as follows.

Text box: maintain textual descriptions, and no obvious regular content, such as: use scenarios, process descriptions, etc.

radio box: maintain the attributes whose values can be exhausted, such as gender: male, female; season: spring, summer, autumn, winter, etc.

Check box: maintain attributes whose values can be multi-selected at the same time, such as hobby, label, etc.

Drop-down box: Maintains attributes that require single or multiple selection but have more attribute values, such as color, material, etc.

Time and date: Maintains properties that require precise time, such as listing date, etc.

Custom components: In addition to the above common form components, you can also develop the corresponding components according to your needs

6. Personalized management

For platform-based e-commerce systems, as there are more merchants involved, different merchants usually add their own defined attributes in order to highlight their own product characteristics, so it is necessary to leave an extension for personalization settings when designing features.

7. Function ordering

Different products have different emphasis on the display of attributes, so it is necessary to adjust the position of attribute groups and attributes through the sorting function.

IV. Design Solution

According to the function points organized above, we know what issues need to be dealt with in the attribute function, and then we look at several functional design options.

1. key-value pairs

The key-value pair is the simplest maintenance method, its attribute maintenance function is directly bound with the commodity, and the attribute information needs to be maintained directly through the add or delete operation.

This development method is generally suitable for systems with a relatively small number of products and not very high requirements for attribute search.

2. Attribute pooling

In order to keep the data in order and maximize the reuse of data, the back-end system will pool all the attributes involved in the products together to form an attribute pool, and then unify the management.

The specific operation is as follows.

First, maintain all the attributes and corresponding attribute values of the products

Bind the attributes and attribute values of the current category in the category management, and set the form maintenance method, whether to search, whether to be required, etc.

When adding a product, first select a category for the product, then call out the set attributes according to the category, and display the maintenance method according to the set items

Maintenance staff selects or fills in the attribute value content.

Through this way to build the attribute function, the product has which attributes only need to be configured once at the beginning of the creation of the category, later maintenance personnel only need to focus on maintaining the product attribute value, maintenance costs will be reduced a lot.

This approach also has great disadvantages: when the platform has too many categories of goods, the attributes and attribute values in the attribute pool will be very large, it is difficult to find when binding attributes to categories; another for the platform is not friendly to the personalized display, the same commodity information, different merchants want to reflect the focus of different, then the order of the display of attributes is not the same; and such as the color of cell phones, the same red, some may be called Rose red, some called dazzling red, and so on.

Attribute pool this design scheme is generally used in the more concentrated categories of self-owned e-commerce, such as clothing mall, furniture mall, etc. 3.

3. attribute template

For large platforms, commodity information should be maintained in accordance with the requirements of the platform, but also need to leave room for personalized settings, usually using the way to build templates to complete.

The specific operation is as follows.

The platform will first create a set of basic attribute templates on the back-end categories, which specify all the attributes of the current categories and set various operation functions, such as attribute groups, attribute names, whether they are required, whether they participate in search, maintenance methods, optional attribute values, etc.

When merchants maintain the products, they can first make some adjustments to the basic category template according to their needs, such as adjusting the location of the attribute groups and attributes, deleting some non-required attributes, adding personalized attributes, etc., and then saving them as personalized templates.

When merchants maintain products, they first set up the corresponding category of products and obtain the attribute configuration of the new template through the category ID, and then perform data maintenance.

The adjustment of attribute templates allows merchants to have a more concise operation as well as to maximize the space for personalization.

However, there are drawbacks, in the back-end maintenance of category attributes, different categories often appear the same attributes, such as cell phones and computers two categories, there will be battery information (charger, wireless charging, whether the battery can be removed), then you need to manually add battery information under each category, although the name is the same but there is no connection between them, if in the front-end search If you search for 'wireless charging' on the front end, you may not be able to accurately match some of these products.

To solve this problem, we need the help of other functions, and I will explain the specific method in the search section later.

The three design options described above, each with its own advantages and disadvantages, you according to their own use of the scene reasonable choice, and finally give the key prototype design of the attribute template.

5. design prototype

Category attribute settings.

Attribute form prototype.

The above is all the content of the attribute management, I hope it will help you, welcome the following message exchange!