

Role-Playing Relationships

Whenever you create a relationship to a dimension, whether from a fact table to a dimension or from one dimension to another dimension, an instance of that dimension is added to the model. In some cases, the same dimension may be referenced in more than one context in the same model. A role-playing relationship is what differentiates multiple instances of the same dimension in a model.

Basics Of Role-Playing

For example, suppose that you want to create a relationship between the **orderdatekey** and **shipdatekey** keys in a fact dataset and the **Day** level in the **Date Month** and **Date Week** hierarchies in the Date dimension. The results would look like the top four relationship lines of the model below:

Figure 1. Role-playing relationships: The Date dimension is in relationships to orderdatekey and shipdatekey in a fact dataset. The top four relationships trace to the Month and Week Hierarchies of the Date Dimension.



The **Date** dimension is in relationships with **orderdatekey** and **shipdatekey**. Each relationship is labeled with a role-playing name.

To create this relationship, you first drag **orderdatekey** to the **Day** level. The **Edit Relationship** panel opens. In the **Role-Playing Template** field, you use the dimension variable **{0}** to insert the role-played dimension name like this: **"Order {0}"**

You use the dimension variable **{0}** to determine whether the template is a prefix, suffix, or both. For example:

- ▲ **Prefix:** "Order {0}"
- ▲ **Suffix** "{0} Order"
- ▲ **Prefix and Suffix:** "Order {0} Sales"



Note: If you enter a value in the **Role-Playing Template** field that does not include the dimension variable **{0}**, AtScale assumes that the input is a prefix and append **{0}** to the value when you save.

Setting A Role-Playing Prefix

To set a role-playing prefix:

1. Drag **orderdatekey** to the day level of the Date Month Hierarchy within the date dimension.
2. Enter **"Order {0}"** in the **Role-Playing Template** field.
3. Click **Apply**.

The prefix **"Order "** is appended to every attribute of the Date dimension for queries involving order dates.

Setting A Role-Playing Suffix

To set a role-playing suffix:

1. Drag **shipdatekey** to the day level of the Date Month Hierarchy within the date dimension.
2. Enter **"{0} Ship"** in the **Role-Playing Template** field.
3. Click **Apply**.

Though this example demonstrates the creation of role-playing relationships between a fact table and a dimension, you can also create role-playing relationships between a dimension and another dimension. To do so, open the Canvas for the dimension that the relationships will be created from. Add the second dimension from the **Repo Browser**, then create the role-playing relationships as described in the example above.

Setting A Role-Playing Prefix And Suffix

To add a suffix and prefix to your role-playing relationship:

1. Drag `orderdatekey` to the day level of the Retail hierarchy within the date dimension.
2. Enter "**Order {0} Finance**" in the **Role-Playing Template** field.
3. Click **Apply**.

Recursion

Role-playing becomes recursive when you create role-playing relationships between a fact table and a dimension, and between that dimension and another dimension.

For a simple example, suppose that you have a fact table and two dimensions.

Fact table: `fact_auction_transactions`

Among other fields, each transaction recorded contains keys for buyers and for sellers.

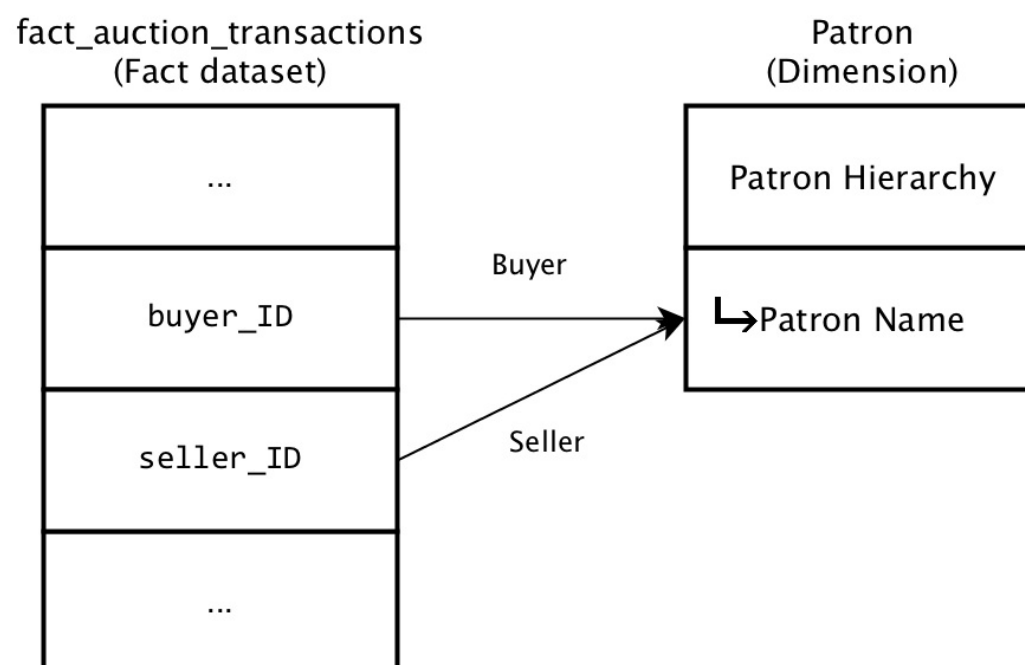
Dimension: Person

Among other attributes, each person has a name, a key for a billing zipcode, and a key for a shipping zipcode.

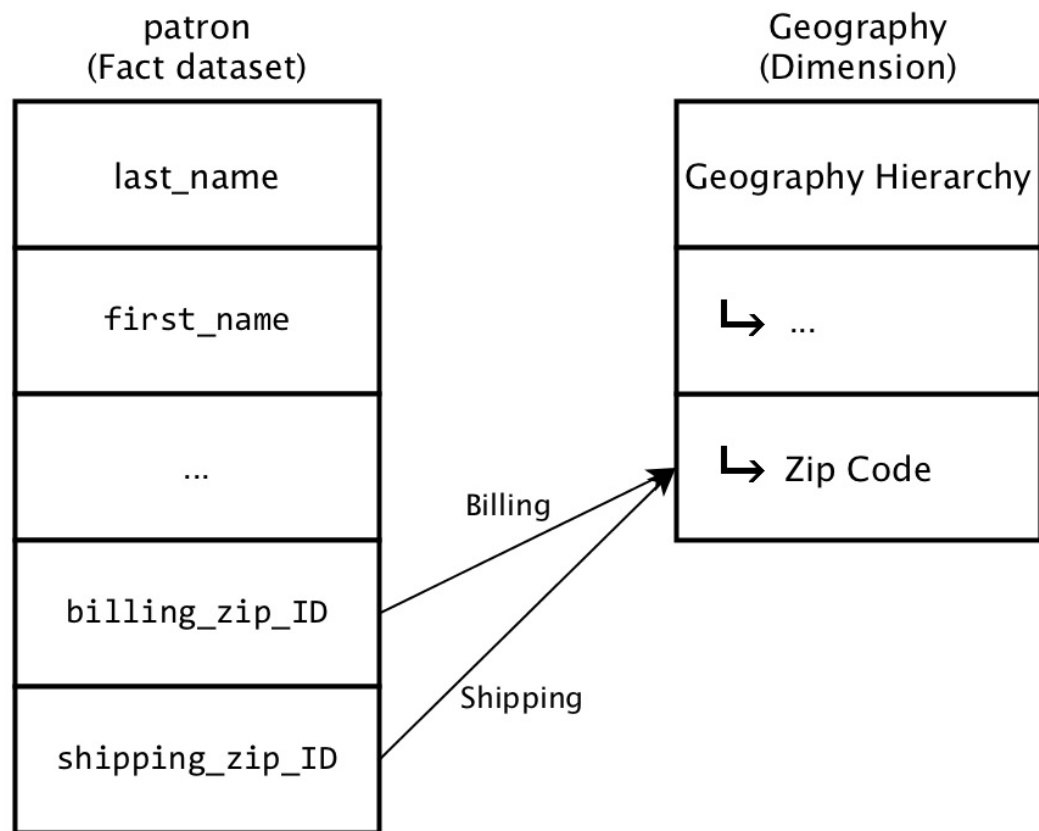
Dimension: Geography

Among other attributes, this hierarchy includes zip codes.

On the model Canvas, you create two role-playing relationships from the `buyer_ID` and `seller_ID` keys to the Person level of the Person hierarchy.



You open the Canvas for the Person dimension and add the Geography hierarchy. Then, you create two role-playing relationships from the `billing_zip_ID` and `shipping_zip_ID` keys to the Zip Code level of the Geography hierarchy in the Geography dimension.



You then have four copies of the Zip Code attribute:

- ▲ Buyer Billing Zip Code
- ▲ Buyer Shipping Zip Code
- ▲ Seller Billing Zip Code
- ▲ Seller Shipping Zip Code