

Examining Data Types

If you're unsure what data types are assigned to a column—perhaps it's an existing table that someone else created, you think you might have made a mistake, or you just forgot how you defined it—there are different ways to get this information.

Examine the Table Schema

Of course, you can use Hue's Table Browser, or the data source panel on the left in Hue, to view the table's schema. You can view the names of the columns along with their data types. As you learned in the Week 2 reading, “Examining Table Structure,” you can also use the DESCRIBE or DESCRIBE FORMATTED commands. Both show what columns are in the table, with their data types and sometimes comments. DESCRIBE FORMATTED provides a bit more information, including the format and location of the table's data files.

The SHOW CREATE TABLE command can also be used to see a table's definition. You can read the resulting CREATE TABLE command to see what the columns are, including what their data types are.

See “Examining Table Structure” in Week 2 if you need a refresher on those commands.

The typeof Function in Impala

In Impala (but not Hive), you can also use the typeof function in a SELECT statement to get the data type:

```
SELECT typeof(colname) FROM tablename LIMIT 1;
```

If you don't use LIMIT 1 it will return one row for each row in the table.

This method also is useful to see what data type an expression returns. Directly examining a table, whether using Hue's graphical interface or by using a command, will not provide this information. Instead of *colname* in the query above, use the expression you're interested in. If the expression doesn't involve a column reference, Impala will allow you to leave off the FROM clause.

Try It!

Follow the steps below to practice using the typeof function with Impala. If you want to practice using DESCRIBE or SHOW CREATE TABLE, see “Examining Table Structure” in Week 2.

1. Use the typeof function to find the data type of the list_price column in the fun.games table. (Use the SELECT statement above, replacing *colname* and *tablename*.)
2. Some governments add a sales tax to purchases of items such as games. The amount of the tax is a percentage of the price paid. For example, a 7% sales tax would make the tax of a game $0.07 * \text{list_price}$, and the final cost would be $1.07 * \text{list_price}$. Find the data type of this expression, for the games in the fun.games table.
3. Impala will allow you to omit the FROM clause when there is no column reference. Use the typeof function in Impala to find the data type of the following expressions. (All you need is `SELECT expression;`)

a. 0.6

b. `cos(0.6)`

c. `ceil(cos(0.6))`

d. `ceil(cos(0.6))/3`