

### Exercise 3:

#### Let's look at sales first:

- The rental table contains one row for each rental of each inventory item with information about who rented what item, when it was rented, and when it was returned
  - The rental table refers to the inventory, customer, and staff tables and is referred to by the payment table
  - Rental\_id: A surrogate primary key that uniquely identifies the rental
1. How many rentals (basically, the sales volume) happened from 2005-05 to 2005-08?  
Hint: use date between '2005-05-01' and '2005-08-31';
  2. I want to see the rental volume by month. Hint: you need to use substring function to create a month column, e.g.
  3. Rank the staff by total rental volumes for all time period. I need the staff's names, so you have to join with staff table

#### How about inventory?

4. Create the current inventory level report for each film in each store?
  - The inventory table has the inventory information for each film at each store
    - inventory\_id - A surrogate primary key used to uniquely identify each item in inventory, so each inventory id means each available film.
5. When you show the inventory level to your manager, you manager definitely wants to know the film name. Please add film name for the inventory report.
  - The column in film table is the film name
  - Should you use left join or inner join? – this depends on how you want to present your result to your manager, so there is no right or wrong answer
  - Which table should be your base table if you want to use left join?
6. After you show the inventory level again to your manager, you manager still wants to know the category for each film. Please add the category for the inventory report.

- Name column in category table is the category name
  - You need to join film, category, inventory, and film\_category
7. Your manager is happy now, but you need to save the query result to a table, just in case your manager wants to check again, and you may need the table to do some analysis in the future
    - Use CREATE statement to create a table called as inventory\_rep
  8. Use your report to identify the film which is not available in any store, and the next step will be to notice the supply chain team to add the film into the store

**Let's look at Revenue:**

- The payment table records each payment made by a customer, with information such as the amount and the rental being paid for. Let us consider the payment amount as revenue and ignore the receivable revenue part
  - rental\_id: The rental that the payment is being applied to. This is optional because some payments are for outstanding fees and may not be directly related to a rental – which means it can be null;
9. How many revenues made from 2005-05 to 2005-08 by month?
  10. How many revenues made from 2005-05 to 2005-08 by each store?
  11. Say the movie rental store wants to offer unpopular movies for sale to free up shelf space for newer ones. Help the store to identify unpopular movies by counting the number of rental times for each film. Provide the film id, film name, category name so the store can also know which categories are not popular. Hint: count how many times each film was checked out and rank the result by ascending order.