

Databases & SQL for Analysts

3.2: Data Storage & Structure

Database Schema



1. Type of schema: Snowflake schema

2. Fact tables:

| Table | Column | Data Types | Description |
|---------|--------------|-----------------------------|---|
| rental | rental_id | integer | <i>Primary Key</i> rental id number |
| | rental_date | timestamp without time zone | rental date & time |
| | inventory_id | integer | inventory id number |
| | customer_id | smallint | <i>Foreign Key to public.customer</i> customer id number |
| | return_date | timestamp without time zone | return date & time |
| | staff_id | smallint | <i>Foreign Key to public.staff</i> staff id number |
| | last_update | timestamp without time zone | last update date & time |
| payment | payment_id | integer | <i>Primary Key</i> |

| | | | |
|--|--------------|-----------------------------|---|
| | | | payment id number |
| | customer_id | smallint | <i>Foreign Key to public.customer</i> customer id number |
| | staff_id | integer | <i>Foreign Key to public.staff</i> staff id number |
| | rental_id | integer | <i>Foreign Key to public.rental</i> rental id number |
| | amount | numeric | payment amount in USD |
| | payment_date | timestamp without time zone | payment date & time |

3. Dimension tables:

| Table | Column | Data Types | Description |
|-----------|------------------|-----------------------------|---|
| inventory | inventory_id | integer | <i>Primary Key</i> inventory id number |
| | film_id | smallint | <i>Foreign Key to public.film</i> film id number |
| | store_id | smallint | store id number |
| | last_update | timestamp without time zone | last update date & time |
| film | film_id | integer | <i>Primary Key</i> film id number |
| | title | character varying | film title |
| | description | text | film description |
| | release_year | year | film release year |
| | language_id | smallint | <i>Foreign Key to public.language</i> language id number |
| | rental_duration | smallint | rental duration in days |
| | rental_rate | numeric | rental rate amount in USD |
| | length | smallint | film length in minutes |
| | replacement_cost | numeric | film replacement cost in USD |

| | | | |
|---------------|------------------|-----------------------------|--|
| | rating | mpaa_rating | film rating based on MPAA rating sytem |
| | last_update | timestamp without time zone | last update date & time |
| | special_features | text[] | film special features |
| | fulltext | tsvector | related keywords |
| language | language_id | integer | <i>Primary Key</i> language id number |
| | name | character | language name |
| | last_update | timestamp without time zone | last update date & time |
| film_actor | actor_id | smallint | <i>Primary Key with film_id</i> <i>Foreign Key to public.actor</i> actor id number |
| | film_id | smallint | <i>Foreign Key to public.film</i> film id number |
| | last_update | timestamp without time zone | last update date & time |
| actor | actor_id | integer | <i>Primary Key</i> actor id number |
| | first_name | character varying | actor first name |
| | last_name | character varying | actor last name |
| | last_update | timestamp without time zone | last update date & time |
| film_category | film_id | smallint | <i>Primary Key with category_id</i> <i>Foreign Key to public.film</i> category id number |
| | category_id | smallint | <i>Foreign Key to public.category</i> category id number |
| | last_update | timestamp without time zone | last update date & time |
| category | category_id | integer | <i>Primary Key</i> category id number |
| | name | character varying | category name |
| | last_update | timestamp without time zone | last update date & time |
| store | store_id | integer | <i>Primary Key</i> |

| | | | |
|----------|------------------|-----------------------------|---|
| | | | store id number |
| | manager_staff_id | smallint | <i>Foreign Key to public.staff</i> manager staff id number |
| | address_id | smallint | <i>Foreign Key to public.address</i> store address id number |
| | last_update | timestamp without time zone | last update date & time |
| customer | customer_id | integer | <i>Primary Key</i> customer id number |
| | store_id | smallint | store id number |
| | first_name | character varying | customer first name |
| | last_name | character varying | customer last name |
| | email | character varying | customer email |
| | address_id | smallint | <i>Foreign Key to public.address</i> address id number |
| | activebool | boolean | account active status |
| | create_date | date | date the customer account was created |
| | last_update | timestamp without time zone | last update date & time |
| | active | integer | customer active status |
| staff | staff_id | integer | <i>Primary Key</i> staff id number |
| | first_name | character varying | staff first name |
| | last_name | character varying | staff last name |
| | address_id | smallint | <i>Foreign Key to public.address</i> staff address id number |
| | email | character varying | staff email |
| | store_id | smallint | store id number |
| | active | boolean | account active status |
| | username | character varying | staff account username |
| | password | character varying | staff account password |
| | last_update | timestamp without time zone | last update date & time |
| | picture | bytea | staff account profile picture |

| | | | |
|---------|-------------|-----------------------------|---|
| address | address_id | integer | <i>Primary Key</i> address id number |
| | address | character varying | first address |
| | address2 | character varying | second address |
| | district | character varying | district name |
| | city_id | smallint | <i>Foreign Key to public.city</i> city id number |
| | postal_code | character varying | postal code |
| | phone | character varying | phone number |
| | last_update | timestamp without time zone | last update date & time |
| city | city_id | integer | <i>Primary Key</i> city id number |
| | city | character varying | city name |
| | country_id | smallint | <i>Foreign Key to public.country</i> country id number |
| | last_update | timestamp without time zone | last update date & time |
| country | country_id | integer | <i>Primary Key</i> country id number |
| | country | character varying | country name |
| | last_update | timestamp without time zone | last update date & time |

Business Questions:

1. Which actors brought Rockbuster the most revenue? actor, film_actor, film, payment, rental, inventory.
2. What language are the majority of movies in the collection? film, language.