

ERD (Entity Relationship Diagram)



Powered by yFiles

The Rockbuster database has a “snowflake” design. There are Fact, Dimension, and Sub-Dimension tables. For example, the table “Payment” is a Fact table that expands into the Dimension table “Customer” that in turns expands into a Sub-Dimension table “address”.

Data Dictionary

Fact Tables Payment

Columns	Data Type	Description
payment_id	SERIAL	Primary Key, Unique Value to identify payment
customer_id	SMALLINT	Foreign Key, unique number to identify customer
staff_id	SMALLINT	Foreign Key, unique number to identify staff member of Rockbuster
rental_id	INTEGER	Foreign Key, unique number to identify rental transaction
Amount	NUMERIC(5,2)	Monetary amount, amount recorded to each payment transaction
payment_date	TIMESTAMP(6) WITHOUT TIME ZONE	Temporal data, store both date and time.

Rental

Columns	Data Type	Description
rental_id	SERIAL	Primary Key, Unique Value to identify rental transaction
rental_date	TIMESTAMP(6) WITHOUT TIME ZONE	Temporal data, store both date and time used to indicate the date and time the rent has started
inventory_id	INTEGER	Foreign Key, unique number to identify a film or item to be rented by customers
customer_id	SMALLINT	Foreign Key, unique number to identify the customer
return_date	TIMESTAMP(6) WITHOUT TIME ZONE	Temporal data, store both date and time used to indicate the date and time the rental items have returned
staff_id	SMALLINT	Foreign key, unique number used to identify the staff of Rockbuster
last_update	TIMESTAMP(6) WITHOUT TIME ZONE	Temporal data, store both date and time

Inventory

Columns	Data Type	Description
Inventory_id	SERIAL	Primary Key, unique number used to identify a film or item to be rented by customers
film_id	SMALLINT	Foreign Key, unique number to identify each film and connect to Film table
store_id	SMALLINT	Small integer, unique number used to identify the store in Rockbuster classification
last_update	TIMESTAMP(6) WITHOUT TIME ZONE	Foreign Key, unique number to identify rental transaction

Film

Columns	Data Type	Description
film_id	SERIAL	Primary Key, Unique Value to identify each film being rented
Title	CHARACTER VARYING (255)	File title, fixed-length including spaces
description	TEXT	Film synopsis with unlimited length
release_year	YEAR	Integer, the year the film was released
language_id	SMALLINT	Foreign key, unique number used to identify the language of film audio; linked to Language table
rental_duration	SMALLINT	Small integer, the number of days the film was rented for
rental_rate	NUMERIC(4,2)	Rating, number with max 4 digits, including and 2 digits in fraction part
length	SMALLINT	Small integer, the length of file in minutes
replacement_cost	NUMERIC(5,2)	The cost the customer can be charged if lost or damage of rental item. Monetary number
rating	mpaa_rating	Film rating introduced by Movie Picture Association
last_update	TIMESTAMP(6) WITHOUT TIME ZONE	Temporal data, store both date and time
special_features	TEXT	Extra videos related to the film available
fulltext	TSVECTOR	Text-searchable data where we can use a word as an index

Language

Columns	Data Type	Description
language_id	SERIAL	Primary key, unique number used to identify the different languages
name	CHARACTER(20)	The name of the language of the file audio
last_update	TIMESTAMP(6) WITHOUT TIME ZONE	Temporal data, store both date and time

Film Actor

Columns	Data Type	Description
actor_id	SMALLINT	Composite key, unique number used to identify the actor
first_name	CHARACTER VARYING(45)	Actor's first name
last_name	CHARACTER VARYING(45)	Actor's last name
last_update	TIMESTAMP(6) WITHOUT TIME ZONE	Temporal data, store both date and time

Film Category

Columns	Data Type	Description
film_id	SMALLINT	Composite key, unique number used to identify the file
category_id	SMALLINT	Composite key, unique number use to identify the file category
last_update	TIMESTAMP(6) WITHOUT TIME ZONE	Temporal data, store both date and time

Category

Columns	Data Type	Description
category_id	SERIAL	Primary key, unique number used to identify the file category
name	CHARACTER(25)	The name of the file category
Last_update	TIMESTAMP(6) WITHOUT TIME ZONE	Temporal data, store both date and time

Customer

Columns	Data Type	Description
customer_id	SERIAL	Primary Key, Unique number used to identify the customer.
store_id	SMALLINT	Small Integer, unique number used to identify the store in Rockbuster
first_name	CHARACTER VARYING(45)	Customer's first name
last_name	CHARACTER VARYING(45)	Customer's last name
email	CHARACTER VARYING(50)	Customer's email
address_id	SMALLINT	Foreign key, customer's address
activebool	BOOLEAN	True or false statement to indicate the customer account status
create_date	DATE	The date when the customer account was created.
last_update	TIMESTAMP(6) WITHOUT TIME ZONE	Temporal data, store both date and time
active	INTEGER	Integer, number to indicate whether the customer account is active or not

Staff

Columns	Data Type	Description
staff_id	SERIAL	Primary Key, Unique Value to identify the personnel member
first_name	CHARACTER VARYING (45)	Employee's first name
last_name	CHARACTER VARYING(45)	Employee's last name
address_id	SMALLINT	Foreign key, employee's address
email	CHARACTER VARYING(50)	Employee's email
store_id	SMALLINT	Small integer, unique number used to identify the store in Rockbuster
active	BOOLEAN	True or false statement to indicate the employee's status
username	CHARACTER VARYING(16)	Employee's username/log-in ID for internal account
password	CHARACTER VARYING(40)	Employee's password used to log in
last_update	TIMESTAMP(6) WITHOUT TIME ZONE	Temporal data, store both date and time
picture	BYTEA	Employee's picture

Store

Columns	Data Type	Description
store_id	SERIAL	Primary key, unique number used to identify the store in Rockbuster
manager_staff_id	SMALLINT	Foreign key, unique number used to identify the manager staff
address_id	SMALLINT	Foreign key, unique number used to identify the store address
last_update	TIMESTAMP(6) WITHOUT TIME ZONE	Temporal data, store both date and time

Address

Columns	Data Type	Description
Address_id	SERIAL	Primary Key, Unique number used to identify the address
address	CHARACTER VARYING (50)	Any address – line 1
address2	CHARACTER VARYING(50)	Any address – line 2
district	CHARACTER VARYING(20)	District/state/region name
city_id	SMALLINT	Foreign key, small integer, unique number used to identify the city
postal_code	CHARACTER VARYING(10)	Postal code
phone	CHARACTER VARYING(20)	Phone number related to the address
last_update	TIMESTAMP(6) WITHOUT TIME ZONE	Temporal data, store both date and time

City

Columns	Data Type	Description
city_id	SERIAL	Primary key, unique number used to identify the city
city	CHARACTER VARYING(50)	City name
country_id	SMALLINT	Foreign key, unique number used to identify the country
last_update	TIMESTAMP(6) WITHOUT TIME ZONE	Temporal data, store both date and time

Country

Columns	Data Type	Description
country_id	SERIAL	Primary key, unique number used to identify the country
country	CHARACTER VARYING(50)	Country name in the address.
last_update	TIMESTAMP(6) WITHOUT TIME ZONE	Temporal data, store both date and time

Which actors brough Rockbuster the most revenue?

Payment – Rental – Customer – inventory – file_actor – actor

What language are the majority of movies in the collection?

Inventory – film - language