2021

Data Dictionary

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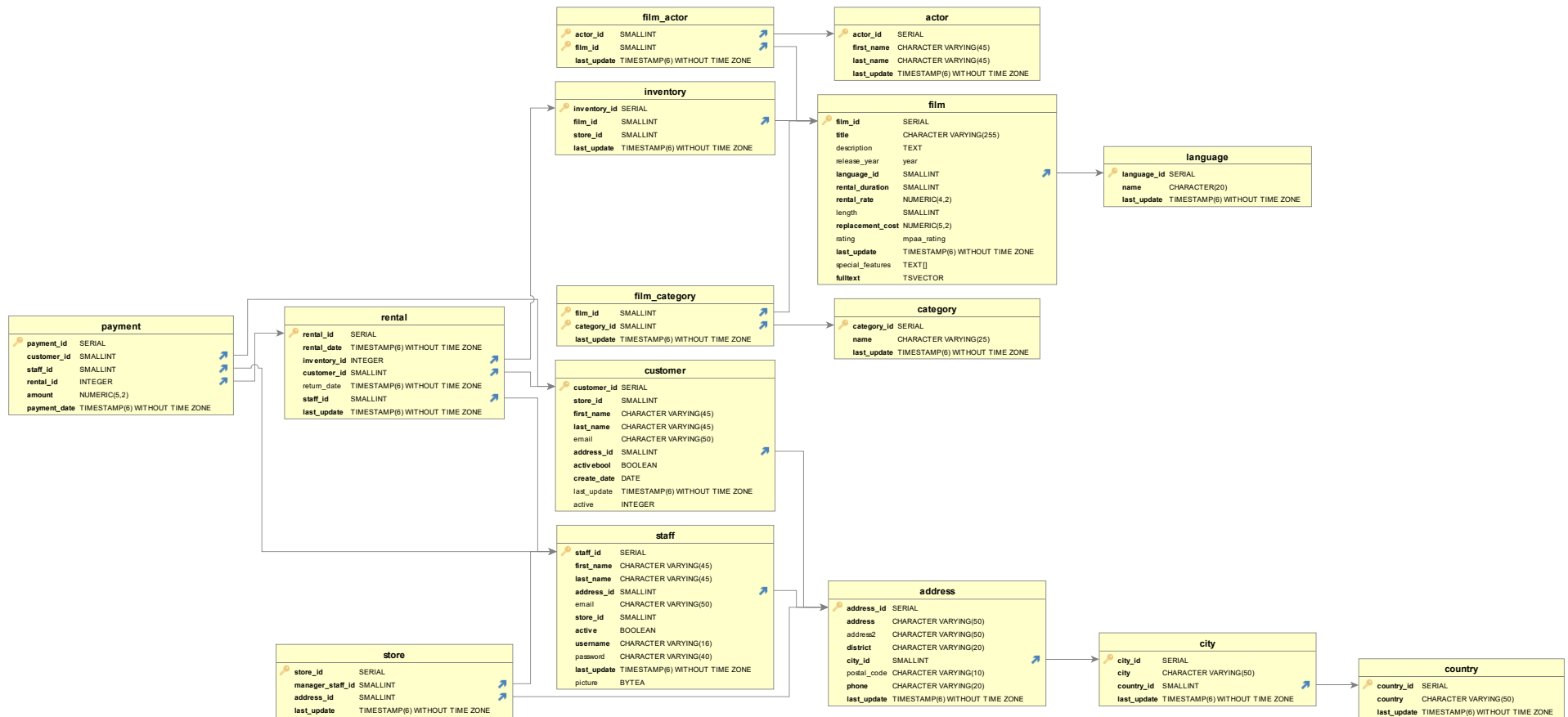
Rockbuster LLC

6/16/2021

Contents

1. Entities

film_actor
🔑 actor_id	SMALLINT
film_id	SMALLINT
last_update	TIMESTAMP(6) WITHOUT TIME ZONE

actor
🔑 actor_id	SERIAL
first_name	CHARACTER VARYING(45)
last_name	CHARACTER VARYING(45)
last_update	TIMESTAMP(6) WITHOUT TIME ZONE

inventory
🔑 inventory_id	SERIAL
film_id	SMALLINT
store_id	SMALLINT
last_update	TIMESTAMP(6) WITHOUT TIME ZONE

film
🔑 film_id	SERIAL
title	CHARACTER VARYING(255)
description	TEXT
release_year	year
language_id	SMALLINT
rental_duration	SMALLINT
rental_rate	NUMERIC(4,2)
length	SMALLINT
replacement_cost	NUMERIC(5,2)
rating	mpaa_rating
last_update	TIMESTAMP(6) WITHOUT TIME ZONE
special_features	TEXT[]
fulltext	TSVECTOR

language
🔑 language_id	SERIAL
name	CHARACTER(20)
last_update	TIMESTAMP(6) WITHOUT TIME ZONE

film_category
🔑 film_id	SMALLINT
category_id	SMALLINT
last_update	TIMESTAMP(6) WITHOUT TIME ZONE

category
🔑 category_id	SERIAL
name	CHARACTER VARYING(25)
last_update	TIMESTAMP(6) WITHOUT TIME ZONE

payment
🔑 payment_id	SERIAL
customer_id	SMALLINT
staff_id	SMALLINT
rental_id	INTEGER
amount	NUMERIC(5,2)
payment_date	TIMESTAMP(6) WITHOUT TIME ZONE

rental
🔑 rental_id	SERIAL
rental_date	TIMESTAMP(6) WITHOUT TIME ZONE
inventory_id	INTEGER
customer_id	SMALLINT
return_date	TIMESTAMP(6) WITHOUT TIME ZONE
staff_id	SMALLINT
last_update	TIMESTAMP(6) WITHOUT TIME ZONE

customer
🔑 customer_id	SERIAL
store_id	SMALLINT
first_name	CHARACTER VARYING(45)
last_name	CHARACTER VARYING(45)
email	CHARACTER VARYING(50)
address_id	SMALLINT
activebool	BOOLEAN
create_date	DATE
last_update	TIMESTAMP(6) WITHOUT TIME ZONE
active	INTEGER

staff
🔑 staff_id	SERIAL
first_name	CHARACTER VARYING(45)
last_name	CHARACTER VARYING(45)
address_id	SMALLINT
email	CHARACTER VARYING(50)
store_id	SMALLINT
active	BOOLEAN
username	CHARACTER VARYING(16)
password	CHARACTER VARYING(40)
last_update	TIMESTAMP(6) WITHOUT TIME ZONE
picture	BYTEA

address
🔑 address_id	SERIAL
address	CHARACTER VARYING(50)
address2	CHARACTER VARYING(50)
district	CHARACTER VARYING(20)
city_id	SMALLINT
postal_code	CHARACTER VARYING(10)
phone	CHARACTER VARYING(20)
last_update	TIMESTAMP(6) WITHOUT TIME ZONE

store
🔑 store_id	SERIAL
manager_staff_id	SMALLINT
address_id	SMALLINT
last_update	TIMESTAMP(6) WITHOUT TIME ZONE

city
🔑 city_id	SERIAL
city	CHARACTER VARYING(50)
country_id	SMALLINT
last_update	TIMESTAMP(6) WITHOUT TIME ZONE

country
🔑 country_id	SERIAL
country	CHARACTER VARYING(50)
last_update	TIMESTAMP(6) WITHOUT TIME ZONE

2. Tables

2.1. Fact Tables

2.1.1. Table: film_actor

Variables

Actors starring in a film.

	Columns	Data Type	Description
🔑	actor_id	Smallint	One of two composite keys to identify actor in a film
🔑	film_id	Smallint	Second of two composite keys to identify actor in a film
	last_update	Timestamp(6) without time zone	Last time the record was updated

Linked from

Link	Table	Join	Description
M:1	actor	film_actor.actor_id = actor.actor_id	FK in film_actor.actor_id references PK in actor.actor_id
M:1	film	film_actor.film_id = film.film_id	FK in film_actor.actor_id references PK in film.film_id

Unique keys

	Columns	Description
🔑	actor_id, film_id	Composite key to identify actor in a film

2.1.2. Table: payment

Payments for films rented by customers.

Variables

	Columns	Data Type	Description
🔑	payment_id	Serial	Primary key of payment transaction
	customer_id	Smallint	Foreign key of customer table
	staff_id	Smallint	Foreign key for the staff table
	rental_id	Integer	Foreign key for the rental table
	amount	Numeric(5,2)	Total price
	payment_date	Timestamp(6) without time zone	Date of payment

Linked from

Link	Table	Join	Description
M:1	customer	payment.customer_id = customer.customer_id	FK in payment.customer_id references PK in customer.customer_id.
M:1	staff	payment.staff_id = staff.staff_id	FK in payment.staff_id references PK in staff.staff_id.
M:1	rental	payment.rental_id = rental.rental_id	FK in payment.rental_id references PK in rental.rental_id..

Unique keys

	Columns	Description
🔑	payment_id	Primary key to identify actor in a film.
🔑	rental_id	Assuming each rental is fully paid at one point in time.

2.1.3. Table: film_category

Categories for each film.

Variables

	Columns	Data Type	Description
🔑	film_id	Smallint	One of two composite keys to identify film category of a film. It is the foreign key for the film table
🔑	category_id	Smallint	Second of two composite keys to identify film category for a film. It is the foreign key for the category table
	last_update	Timestamp(6) without time zone	Last time the record was updated

Linked from

Link	Table	Join	Description
M:1	film	film_category.film_id = film.film_id	FK in film_category.film_id references PK in film.film_id
M:1	category	film_category.actor_id = category.category_id	FK in film_category.category_id references PK in category.category_id

Unique keys

	Columns	Description
🔑	film_id, category_id	Composite key to identify a film's category

2.1.4. Table: store

Store where rental is purchased by customers.

	Columns	Data Type	Description
🔑	store_id	Serial	Primary key
	manager_staff_id	Smallint	Store's manager. Foreign key for the staff table.
	address_id	Smallint	Store's address. Foreign key of the store table.
	last_update	Timestamp(6) without time zone	Last time the record was updated

Linked from

Link	Table	Join	Description
M:1	staff	store.manager_staff_id = staff.staff_id	FK in store.manager_staff_id references PK in staff.staff_id.
M:1	address	store.address_id = address.address_id	FK in store.address_id _id references PK in address.address_id.

Unique keys

	Columns	Description
🔑	store_id	Primary key to identify store.

2.2. Dimension Tables

2.2.1. Table: actor

Actor who stars in a film.

Variables

	Columns	Data Type	Description
🔑	actor_id	Smallint	Primary key of actor table
	first_name	Character varying(45)	Actors first name
	last_name	Character varying(45)	Actors last name
	last_update	Timestamp(6) without time zone	Last time the record was updated

Link	Table	Join	Description
M:1	film_actor	actor.actor_id = film_actor.actor_id =	FK in film_actor.actor_id references PK in actor.actor_id

	Columns	Description
🔑	actor	Primary key to identify actor

2.2.2. Table: film

Films licensed by Rockbuster Co..

	Columns	Data Type	Description
🔑	film_id	Serial	Primary key of film table
	title	Character varying(255)	Film title
	description	Text	Description of film
	release_year	Year	Year of film release
	language_id	Smallint	Main language of the film. Foreign key to the language table.
	rental_duration	Smallint	Maximum time the film can be rented in days
	rental_rate	Numeric(4,2)	Price per rental instance.
	length	Smallint	Length of the film (minutes?)
	replacement_cost	Numeric(4,2)	Cost of replacement in case of damage or loss of rental
	rating	Mpaa_rating	Film rating based on MPAA standards. E.g., PG-13
	last_update	Timestamp(6) without time zone	Last time the record was updated
	special_features	Text[]	Special features included in the rental package of the film
	fulltext	Tsvector	Word vector for film name?

Link	Table	Join	Description
1:M	film_actor	film.film_id = film_actor.film_id	FK in film_actor.film_id references PK in film.film_id.
1:M	inventory	film.film_id = inventory.film_id	FK in inventory.film_id references PK in film.film_id.
1:M	film_category	film_category.actor_id = category.category_id	FK in inventory.film_id references PK in category.category_id.

Linked to

Link	Table	Join	Description
M:1	language	film.language_id = language.language_id	FK in film.language_id references PK in language.language_id.

Unique keys

	Columns	Description
🔑	film_id	Primary key to identify film.

2.2.3. Table: language

Spoken language in a film.

Variables

	Columns	Data Type	Description
🔑	language_id	Serial	Primary key
	name	Character(20)	Language name
	last_update	Timestamp(6) without time zone	Last time the record was updated

Linked from

Link	Table	Join	Description
1:M	language	language.language_id = film.language_id	FK in film.language_id references PK in language.language_id.

	Columns	Description
🔑	language_id	Primary key to identify language.

2.2.4. Table: inventory

Location of films licensed by Rockbuster.

Variables

	Columns	Data Type	Description
🔑	inventory_id	Serial	Primary key
	film_id	Smallint	Foreign key for the film table. Linked to the characteristics of the film
	store_id	Smallint	actors last name
	last_update	Timestamp(6) without time zone	Last time the record was updated

Linked from

Link	Table	Join	Description
1:M	rental	inventory.inventory_id = rental.inventory_id	FK in rental.inventory_id references PK in inventory.inventory_id..

Linked to

Link	Table	Join	Description
M:1	film	inventory.film_id = film.film_id	FK in inventory.film_id references PK in film.film_id.

Unique keys

	Columns	Description
🔑	inventory_id	Primary key to identify a film stored in a particular store.

2.2.5. Table: customer

Customer who rented at least one film.

Variables

	Columns	Data Type	Description
🔑	customer_id	Serial	Primary key
	store_id	Smallint	Unlinked foreign key for the store table. Store where the customer rented the film.
	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
	address_id	Smallint	Foreign key for address table. Linked to customer's address
	activebool	Boolean	Status of customer. 1=active,0=inactive
	create_ date	Date	Date customer was first entered into the database
	last_update	Timestamp(6) without time zone	Last time the record was updated
	active	Integer	Status of customer

Linked from

Link	Table	Join	Description
1:M	payment	customer.customer_id = payment.customer_id	FK in payment.customer_id references PK in customer.customer_id.
1:M	rental	customer.customer_id = rental.customer_id	FK in rental.customer_id references PK in customer.customer_id..

Linked to

Link	Table	Join	Description
M:1	address	customer.address_id = address.address_id	FK in customer.address_id references PK in address.address_id.

	Columns	Description
🔑	customer_id	Primary key to identify customer.

2.2.6. Table: rental

Rental session for a film.

Variables

	Columns	Data Type	Description
🔑	rental_id	Serial	Primary key of rental event
	rental_date	Timestamp(6) without time zone	Date of rental
	inventory_id	Integer	Foreign key for inventory table with film product
	customer_id	Smallint	Foreign key for Customer table. Linked to customer current renting a film
	return_date	Timestamp(6) without time zone	Last DATE a customer should return the film
	staff_id	Smallint	foreign key for staff table. Denotes the staff operating the check-out terminal
	last_update	Timestamp(6) without time zone	Last time the record was updated

Linked from

Link	Table	Join	Description
M:1	inventory	rental.inventory_id = inventory.inventory_id	FK in rental.inventory_id references PK in inventory.inventory_id..
M:1	customer	rental.customer_id = customer.customer_id	FK in rental.customer_id references PK in customer.customer_id.
M:1	staff	rental.staff_id = staff.staff_id	FK in rental.staff_id references PK in staff.staff_id.

Link	Table	Join	Description
1:1	payment	rental.rental_id = payment.rental_id	FK in payment.rental_id references PK in rental.rental_id..

Unique keys

	Columns	Description
🔑	rental_id	Primary key to identify a rental session.

2.2.7. Table: staff

Staff employed at Rockbuster stores.

Variables

	Columns	Data Type	Description
🔑	staff_id	Serial	Primary key
	first_name	Character varying(45)	Staff's first name
	last_name	Character varying(45)	Staff's last name
	address_id	Smallint	Staff's address information. Foreign key to the address table
	email	Character varying(50)	Staff's email address
	store_id	Smallint	Store id
	active	Boolean	Status of staff. 1=active, 0=Inactive
	username	Character varying(16)	Staff's username
	password	Character varying(40)	Staff's password
	last_update	Timestamp(6) without time zone	Last time the record was updated
	picture	Bytea	Staff's picture

Linked from

Link	Table	Join	Description
1:M	payment	staff.staff_id = payment.staff_id	FK in payment.staff_id references PK in staff.staff_id .
1:M	rental	staff.staff_id = rental.staff_id	FK in rental.staff_id references PK in staff.staff_id.
1:M	store	staff.staff_id = store.manager_staff_id	FK in store.manager_staff_id references PK in staff.staff_id.

Link	Table	Join	Description
M:1	address	staff.address_id = address.address_id	FK in staff.address_id references PK in address.address_id.

Unique keys

	Columns	Description
🔑	staff_id	Primary key to identify staff employed at the Rockbuster stores.

2.2.8. Table: category

Film categories rented at Rockbuster stores.

Variables

	Columns	Data Type	Description
🔑	category_id	Serial	Primary key
	name	Character varying(255)	Name of category
	last_update	Timestamp(6) without time zone	Last time the record was updated

Linked to

Link	Table	Join	Description
1:M	film_category	category.category_id = film_category.categoory_id	FK in film_category.category_id references PK in category.category_id

Unique keys

	Columns	Description
🔑	category_id	Primary key to identify film categories.

2.2.9. Table: address

Location address of customers, staffs, and stores.

Variables

	Columns	Data Type	Description
🔑	address_id	Serial	Primary key
	address	Character varying(50)	Building and room number
	address2	Character varying(50)	Street address
	district	Character varying(20)	District name
	city_id	Smallint	City id. Foreign key for the city table
	postal_code	Character varying(10)	Postal code (or Zip code)
	phone	Character varying(20)	Phone number (home or mobile)
	last_update	Timestamp(6) without time zone	Last time the record was updated

Linked from

Link	Table	Join	Description
1:M	customer	address.address_id = customer.address_id	FK in customer.address_id references PK in address.address_id.
1:M	staff	address.address_id = staff.address_id	FK in staff.address_id references PK in address.address_id.
1:M	store	store.address_id = address.address_id	FK in store.address_id _id references PK in address.address_id.

Linked to

Link	Table	Join	Description
M:1	city	address.city_id = city.city_id	FK in address.city_id references PK in city.city_id

Unique keys

	Columns	Description
🔑	address_id	Primary key to identify specific address.

2.2.10. Table: city

City where customer is located.

Variables

	Columns	Data Type	Description
🔑	city_id	Serial	Primary key
	city	Character varying(50)	City name
	country_id	Smallint	Country in which city is located. Foreign key to the country table
	last_update	Timestamp(6) without time zone	Last time the record was updated

Linked from

Link	Table	Join	Description
M:1	address	city.city_id = address.city_id	FK in address.city_id references PK in city.city_id

Linked to

Link	Table	Join	Description
1:M	country	city.country_id = country.country_id	FK in city.country_id references PK in country.country_id

Unique keys

	Columns	Description
🔑	city_id	Primary key to identify a specific city.

2.2.11. Table: country

Country where customer is located.

Variables

	Columns	Data Type	Description
🔑	country_id	Serial	Primary key
	country	Character varying(50)	Country name
	last_update	Timestamp(6) without time zone	Last time the record was updated

Link	Table	Join	Description
M:1	city	country.country_id = city.country_id	FK in city.country_id references PK in country.country_id

Unique keys

	Columns	Description
🔑	country_id	Primary key to identify a specific country

3. Supplementary Materials

3.1. Limitations to Further Analysis

Based on the business questions outline in the project brief, the following are some limitations that are present in the database which prevented deeper analysis.

- *Which movies contributed to revenue gain?* This question cannot be answered since the data is limited to 2005 to 2006 only.
- Since the data was limited 2 years, comparisons of rentals and sales to previous years and sales forecasting were impossible using data from the current database.

3.2. Data Viz

Click to view