

Exercise 3.2  
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- Snowflake or star schema
  - The ERD is a snowflake schema. While the fact tables are in the center surrounded by dimensions tables, they are surrounded by sub-dimensions tables.
- List all the fact tables and all the dimensions tables in the schema

## Fact Tables

## Payment

Column	Data Type	Description
Payment_id	Serial	Unique payment identifier
Customer_id	Smallint	Unique customer identifier
Staff_id	Smallint	Unique staff identifier
Rental_id	Integer	Unique rental identifier
Amount	Numeric(5,2)	Amount of payment received
Payment_date	Timestamp (6) without time zone	Time and date of payment

## Rental

Column	Data Type	Description
Rental_id	Serial	Unique rental identifier
Rental_date	Timestamp (6) without time zone	Time and date of rental
Inventory_id	Integer	Unique inventory identifier
customer_id	smallint	Unique customer identifier

Return_date	Timestamp (6) without time zone	Time and date of return
Staff_id	Smallint	Unique staff identifier
Last_update	Timestamp (6) without time zone	Time and date of last update

#### Dimensions Tables

##### **Customer**

Customer_id	Serial	Unique customer identifier
Store_id	Smallint	Unique store identifier
First_name	Character varying (45)	First name of customer
Last_name	Character varying (45)	Last name of customer
Email	Character varying (50)	Email of customer
Address_id	Smallint	Unique address identifier
Activebool	Boolean	Status of whether a customer is active
Create_date	Date	Date of customer profile creation
Last_update	Timestamp (6) without time zone	Time and date of last update
Active	Integer	Active status represented by 1 or 0

##### **Store**

Store_id	Serial	Unique store identifier
Manager_Staff_id	Smallint	Unique manager identifier
Address_id	Smallint	Unique address identifier
Last-update	Timestamp (6) without time zone	Time and date of last update

##### **Staff**

Staff_id	Serial	Unique staff identifier
First_name	Character varying (45)	First name of staff
Last_name	Character varying (45)	Last name of staff
Email	Character varying (50)	Email of staff
Store_id	Smallint	Unique store identifier
Activebool	Boolean	Status of whether a staff member is active
Username	Character varying (16)	Staff's username
Password	Character varying (40)	Staff's password
Last_update	Timestamp (6) without time zone	Time and date of last staff profile update

Picture	Bytea	Picture of staff member
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#### Address

Address_id	Serial	Unique address identifier
Address	Character varying (50)	First line of address
Address2	Character varying (50)	Second line of address
District	Character varying (20)	District of address
City_id	Smallint	Unique city identifier
Postal_code	Character varying (10)	Postal code of address
Phone	Character varying (10)	Phone number of address
Last_update	Timestamp (6) without time zone	Last update of address

#### City

City_id	Serial	Unique city identifier
City	Character varying (50)	Name of city
Country_id	Smallint	Unique country identifier
Last_update	Timestamp (6) without time zone	Last update of city

#### Country

Country_id	Serial	Unique country identifier
Country	Character varying (50)	Name of country
Last_update	Timestamp (6) without time zone	Last update of country

#### Film

Film_id	Serial	Unique film identifier
Title	Character varying (255)	Title of film
Description	Text	Description of film
Release_year	Year	Film release year
Language_id	Smallint	Unique language identifier
Rental_Duration	Smallint	Duration of rental
Rental_Rate	Numeric(4,2)	Rate of rental
Length	Smallint	Length of film
Replacement_cost	Numeric(5,2)	Cost to replace film
Rating	Mpaa_rating	Rating of film
Last_update	Timestamp (6) without time zone	Last update of film profile
Special_features	Text[]	Special features of film
Fulltextt	Tsvector	Full text index. Information about significant words.

**Category**

Category_id	Serial	Unique category identifier
Name	Character varying (25)	Name of category
Last_update	Timestamp (6) without time zone	Last update of category

**Film\_Category**

Film_id	Smallint	Unique film identifier
Category_id	Smallint	Unique category identifier
Last_update	Timestamp (6) without time zone	Last update of film

**Language**

Language_id	Serial	Unique language identifier
Name	Character (2)	Name of language
Last_update	Timestamp (6) without time zone	Last update of language

**Actor**

Actor_id	Serial	Unique actor identifier
First_name	Character varying (45)	First name of actor
Last_name	Character varying (45)	Last name of actor
Last_update	Timestamp (6) without time zone	Last update of actor profile

**Film\_Actor**

Actor_id	Smallint	Unique actor identifier
Film_id	Smallint	Unique film identifier
Last_update	Timestamp (6) without time zone	Last update of film actor

**Inventory**

Inventory_id	Serial	Unique inventory identifier
Film_id	Smallint	Unique film identifier
Store_id	Smallint	Unique store identifier

Last_update	Timestamp (6) without time zone	Last update of inventory
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Tables needed for:

- Which actor brought Rockbuster the most revenue?
  - Payment
  - Rental
  - Inventory
  - Film
  - Film Actor
  - Actor
- What language are the majority of movies in the collection?
  - Inventory
  - Film
  - Language