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Exercise 3.2

Databases

**Step 3. Create the first draft of a data dictionary:**

**Diagram, table

Description automatically generated**

* Take a moment to examine your ERD. Does the Rockbuster database have a snowflake schema or a star schema? Write a brief explanation for your answer.

The Rockbuster ERD has a snowflake schema, as the fact tables have dimension tables attached hand these have sub-dimension tables attached them.

* List all the fact tables and all the dimension tables in the schema. For each table, list every column and its data type, and write a brief description of the column

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| **Fact Table: Rental** | | |
| **Column** | **Data Type** | **Description** |
| rental\_id | SERIAL | Unique number assigned to rental |
| rental\_date | TIMES STAMP (6) WITHOUT TIME ZONE | Date of video rental |
| Iventory\_id | INTEGER | Unique number assigned to item |
| customer\_id | INTEGER | Unique number assigned to customer |
| return\_date | TIMES STAMP (6) WITHOUT TIME ZONE | Return date of video rental |
| staff\_id | SMALLINT | Unique employee number |
| last\_update | TIMES STAMP (6) WITHOUT TIME ZONE | Date entry was last updated |
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| **Dimension Table: Payment** | | |
| **Column** | **Data Type** | **Description** |
| payment\_id | SERIAL | Unique number assigned to payment |
| customer\_id | SMALLINT | Unique number assigned to customer |
| staff\_id | SMALLINT | Unique number assigned to Employee |
| rental\_id | INTEGER | Unique number assigned to rental |
| amount | NUMERIC (5,2) | Total amount paid |
| payment\_date | TIME STAMP (6) WITHOUT TIME ZONE | Date of payment |

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| **Dimension Table: store** | | |
| **Column** | **Data Type** | **Description** |
| store\_id | SERIAL | Unique number assigned to store |
| manger\_staff\_id | SMALLINT | Unique number assigned to store Manager |
| address\_id | SMALLINT | Unique number assigned to store address |
| last\_update | TIMESTAMP (6) WITHOUT TIME ZONE | Date entry was last updated |

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| **Dimension Table: film\_actor** | | |
| **Column** | **Data Type** | **Description** |
| actor\_id | SMALLINT | Unique number assigned to actor |
| film\_id | SMALLINT | Unique number assigned to film |
| last\_update | TIME STAMP (60 WITHOUT TIME ZONE | Date entry was last updated |

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| **Dimension Table: inventory** | | |
| **Column** | **Data Type** | **Description** |
| inventory\_id | SERIAL | Unique number assigned to item |
| film\_id | SMALLINT | Unique number assigned to film |
| store\_id | SMALLINT | Unique number assigned to store |
| last\_update | TIMESTAMP (6) WITHOUT TIME ZONE | Date entry was last updated |

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| **Dimension Table: film\_catagory** | | |
| **Column** | **Data Type** | **Description** |
| film\_id | SMALLINT | Unique number assigned to film |
| category\_id | SMALLINT | Unique number assigned to category/genre |
| last\_update | TIMESTAMP (6) WITHOUT TIME ZONE | Date entry was last updated |

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| **Dimension Table: film\_customer** | | |
| **Column** | **Data Type** | **Description** |
| customer\_id | SERIAL | Unique number assigned to customer |
| store\_id | SMALLINT | Unique number assigned to store |
| 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 |
| addres\_id | SMALLINT | Address of customer |
| activebool | BOOLEAN | Customer rate of activity |
| create\_date | DATE | Date entry was created |
| lsat\_update | TIMESTAMP(6) WITHOUT TIME ZONE | Date entry was last updated |
| active | INTEGER | Is customer active? |

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| **Dimension Table: staff** | | |
| **Column** | **Data Type** | **Description** |
| staff\_id | SERIAL | Unique number assigned to employee |
| first\_name | CHARACTER VARYING (45) | Employee first name |
| last\_name | CHARACTER VARYING (45) | Employee last name |
| address\_id | SMALLINT | Unique number assigned to Employee address |
| email | CHARACTER VARYING (50) | Employee email |
| store\_id | SMALLINT | Unique number assigned to store |
| active | BOOLEAN | Is employee active? |
| username | CHARACTER VARYING (16) | Username of employee |
| password | CHARACTER VARYING (40) | Password of employee |
| last\_update | TIMESTAMP(6) WITHOUT TIME ZONE | Date entry was last updated |
| picture | BYTEA | Picture of employee |

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| **Dimension Table: actor** | | |
| **Column** | **Data Type** | **Description** |
| actor\_id | SERIAL | Unique number assigned to actor |
| 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 | Date entry was last updated |

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| **Dimension Table: film** | | | | | |
| **Column** | | **Data Type** | | **Description** | |
| film\_id | | SERIAL | | Unique number assigned to film | |
| title | | CHARACTER VARYING (255) | | Title of film | |
| description | | TEXT | | Description of film | |
| release\_year | | year | | Release year of film | |
| language\_id | | SMALLINT | | Unique Number assigned to language of film | |
| rental\_duration | | SMALLINT | | Length of film rental | |
| rental\_rate | | NUMERIC (4,2) | | Price of film rental | |
| length | | SMALLINT | | Length of film | |
| replacement\_code | | NUMERIC (5,2) | | Cost to replace film | |
| rating | | mpaa\_rating | | Film rating | |
| last\_update | | TIMESTAMP(6) WITHOUT TIME ZONE | | Date entry was last updated | |
| special\_features | | TEXT[] | | Special features included in the film | |
| fiulltext | | TSVECTOR | | Keywords associated with the film | |
| **Dimension Table: category** | | | | |
| **Column** | **Data Type** | | **Description** | |
| category\_id | SERIAL | | Unique number assigned to category/genre | |
| name | CHARACTER VARYING (25) | | Name of genre | |
| last\_update | TIMESTAMP(6) WITHOUT TIME ZONE | | Date entry was last updated | |

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| **Dimension Table: address** | | |
| **Column** | **Data Type** | **Description** |
| address\_id | SERIAL | Number assigned to address |
| address | CHARACTER VARYING(50) | Street Address |
| address2 | CHARACTER VARYING(50) | Supplemental street address |
| district | CHARACTER VARYING(20) | District |
| city\_id | SMALLINT | Number assigned to city |
| postal\_code | CHARACTER VARYING(10) | Postal Code |
| phone | CHARACTER VARYING(20) | Phone number |
| last\_update | TIMESTAMP(6) WITHOUT TIME ZONE | Date entry was last updated |

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| **Dimension Table: City** | | |
| **Column** | **Data Type** | **Description** |
| city\_id | SERIAL | Unique number assigned to city |
| city\_id | CHARACTER VARYING(50) | Name of city |
| country\_id | SMALLINT | Unique number assigned to country |
| last\_update | TIMESTAMP(6) WITHOUT TME ZONE | Date entry was last updated |

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| **Dimension Table: City** | | |
| **Column** | **Data Type** | **Description** |
| country\_id | SERIAL | Unique number assigned to county |
| country | CHARACTERVARYING(50) | Name of country |
| last\_update | TIMESTAMP(6) WITHOUT TIME ZONE | Date entry was last updated |

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| **Dimension Table: Language** | | |
| **Column** | **Data Type** | **Description** |
| language\_id | SERIAL | Unique number assigned to language |
| name | CHARACTER (20) | Name of language |
| last\_update | TIMESTAMP(6) WITHOUT TIME ZONE | Date entry was last updated |

* If a column name doesn't tell you enough to write a description, you can also view the tables in pgAdmin 4. The SQL syntax for selecting a table is SELECT \* FROM table\_name. So SELECT \* FROM film

**Step 4. Find information:**

Now that your data dictionary and ERD are ready to use, your manager has given you a list of business questions to answer. Use your data dictionary to figure out which tables you'd need to answer the questions below:

* Which actors brought Rockbuster the most revenue?
  + *I would need to use actor, film\_actor, and film. I got this joined, but I couldn’t figure out how to add all of the rows together to find the highest paid actors.*

Graphical user interface, text, application, email

Description automatically generated

What language are the majority of movies in the collection?

*Here I would combine the language and film category to find the most common languages. Which appears to be English as this is the only language name returned.*

Graphical user interface, text, application, email

Description automatically generated