Introduction

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Methods

Extract: your original data sources and how the data was formatted (CSV, JSON, pgAdmin 4, etc).

Transform: what data cleaning or transformation was required.

Load: the final database, tables/collections, and why this was chosen.

Data sources:

Different sources have been verified. However, following sources were considered as they have majority of the required information.

* -https://www.kaggle.com/shivamb/netflix-shows?select=netflix\_titles.csv
* -Public movie APIs:
* OMDB - OMDb to obtain information and metadata about movies.
* TMDb - TMDb for movie discovery.

Extraction:

Extracting of Netflix data from www.kaggle.com

https://www.kaggle.com/shivamb/netflix-shows?select=netflix\_titles.csv

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Field Name: | Description: | Example: | Data Type: | Unique: | Null: | Comments: |
| show\_id | Unique ID for every Movie / Tv Show | 81145628 | String | Yes | No |  |
| type | Identifier - A Movie or TV Show | Movie | String | No | No |  |
| title | Title of the Movie / Tv Show | Norm of the North: King Sized Adventure | String | No | No |  |
| director | Director of the Movie | Richard Finn, Tim Maltby | String | No | yes | Multiple names in each field |
| cast | Actors involved in the movie / show | Alan Marriott, Andrew Toth, Brian Dobson, Cole Howard, Jennifer Cameron, Jonathan Holmes, Lee Tockar... | String | No | Yes | Multiple names in each field |
| country | Country where the movie / show was produced | United States, India, South Korea, China | String | No | yes | Multiple names in each field |
| date\_added | Date it was added on Netflix | September 9, 2019 | Date | No | yes |  |
| release\_year | Actual Release year of the move / show  text\_formatratingsort  TV Rating of the movie / | 2019 | Integer | No | No |  |
| rating | TV Rating of the movie / show | TV-PG | String | No | Yes |  |
| duration | Total Duration - in minutes or number of seasons | 90 min | String | No | No |  |
| listed\_in | Genre | Children & Family Movies, Comedies | String | No | No | Multiple names in each field |
| description | The summary description | Before planning an awesome wedding for his grandfather, a polar bear king must | String | No | No |  |

Extracting data via API to OMDB and TMDB

This is OMDB API extract:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Field Name: | Description: | Example: | Data Type: | Unique: | Null: | Comments: |
| Title | Title of the Movie / Tv Show | Man of Steel | String | No | No |  |
| Year | Actual Release year of the move / show  text\_formatratingsort  TV Rating of the movie / | 2013 | Integer | No | No |  |
| Rated | TV Rating of the movie / show | PG-13 | String | No | Yes |  |
| Released | Release date | 14 Jun 2013 | String | No | Yes |  |
| Runtime | Duration | 143 min | String | No | Yes |  |
| Genre | Type of movie | Action,Adventure, Sci-Fi | String | No | No |  |
| Director | Director | Zack Snyder | String | No | No |  |
| Writer | Author | David S. Goyer (screenplay)  David S. Goyer (story) | String | No | No |  |
| Actors | Actor and Actress | Henry Cavill  Amy Adams  Michael Shannon  Diane Lane | String | No | No |  |
| Plot | Description | An alien child is evacuated from his dying world and sent to Earth to live among humans. His peace is threatened  when other survivors of his home planet invade Earth | String | Yes | No |  |
| Language |  | English | String | No | No |  |
| Country | Country of producing the product | UA, UK | String | No | No |  |
| Awards | Received Awards for the product | 7 wins & 46 nominations | String | No | Yes |  |
| Poster | create by the studio used to promote or advertise the title | N/A | String | No | No |  |
| Source | IMDb registered users who casts a vote | N/A | String | No | Yes |  |
| Value | Accurate Percentage of the Rating of respected critics | 56% | Float | No | Yes |  |
| Source | Rating of critics | Rotten Tomatoes | String | No | Yes |  |
| Value | Percentage of the Rating of respected critics | 55/100 | Float | No | Yes |  |
| Metascore | Rating of respected critics | 55 | Int | No | Yes |  |
| imdbRating | Rating on IMDB | 7.0 | Int | No | Yes |  |
| imdbVotes | Number of votes for the product | 92 | Int | No | Yes |  |
| imdbID | IMDB Movie ID Number | tt0770828 | String | Yes | No |  |
| Type | Movie or TV-Series | movie | Float | No | No |  |
| DVD | If the product is available on DVD | N/A | String | No | Yes |  |
| BoxOffice | Box Office receives data from a variety of sources, including film studios, distributors, and production companies from around the world | N/A | String | No | Yes |  |
| Production | Production company | Syncopy | String | No | Yes |  |

This is TMDB extracted fields

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Field Name: | Description: | Example | Data Type | Unique | Null | Comments |
|
| adult: TRUE/FALSE |  |  | Boolean |  |  |  |
| backdrop\_path: varchar(255) |  |  | String |  |  |  |
| genre\_ids: Numbers (series) | The type of movie, Comeddy,… |  |  |  |  |  |
| id: varchar (10) | The Movie or Show ID |  | String |  |  |  |
| original\_language: char (2) | Original Language that the movie is produced |  | String |  |  |  |
| original\_title: varchar (255) |  |  | String |  |  |  |
| overview: varchar (1500) |  |  | String |  |  |  |
| popularity: float |  |  | Float |  |  |  |
| poster\_path: varchar(255) |  |  | String |  |  |  |
| release\_date: date | The Release date of the product |  |  |  |  |  |
| title: varchar (255) | The title of the movie ot TV-Series |  | String |  |  |  |
| video: TRUE/FALSE |  |  | Boolean |  |  |  |
| vote\_average: float | Average of Votes for the movie |  | Float |  |  |  |
| vote\_count: int (edited) | Number of Votes |  | Int |  |  |  |

# Data Aggregation of different sources to one.

The result of this process is “Title” table, that is the main feed for creating other tables.

There were some fields that have more than one information, such as Director or the Country of movie that is Released. We normalized this information and added properly to the table. In this process, we removed the duplicates, NaN and configured the proper indexing as well.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Field Name: | Description: | Example | Data Type | Unique | Null | Comments |
|
| show ID |  |  |  |  |  |  |
| Show type |  |  |  |  |  |  |
| Title | Title of the Movie / Tv Show | Man of Steel | String | No | No |  |
| Date Added |  |  |  |  |  |  |
| Netflix release year | Release date | 14 Jun 2013 | String | No | Yes |  |
| rating | TV Rating of the movie / show | TV-PG | String | No | Yes |  |
| director | Director | Zack Snyder | String | No | No |  |
| cast | Actors involved in the movie / show | Alan Marriott, Andrew Toth, Brian Dobson, Cole Howard, Jennifer Cameron, Jonathan Holmes, Lee Tockar... | String | No | Yes | Multiple names in each field |
| duration | Total Duration - in minutes or number of seasons | 90 min | String | No | No |  |
| listed\_in | Genre | Children & Family Movies, Comedies | String | No | No | Multiple names in each field |
| description | The summary description | Before planning an awesome wedding for his grandfather, a polar bear king must | String | No | No |  |
| IMDB rating | Rating on IMDB | 7.0 | Int | No | Yes |  |
| Rotten Tomatoes rating |  |  |  |  |  |  |
| Award | Received Awards for the product | 7 wins & 46 nominations | String | No | Yes |  |
| Released Date |  |  |  |  |  |  |
| Budget |  |  |  |  |  |  |
| Movie ID |  |  |  |  |  |  |
| Revenue |  |  |  |  |  |  |

# Transformation

Data transformation will include following tasks:

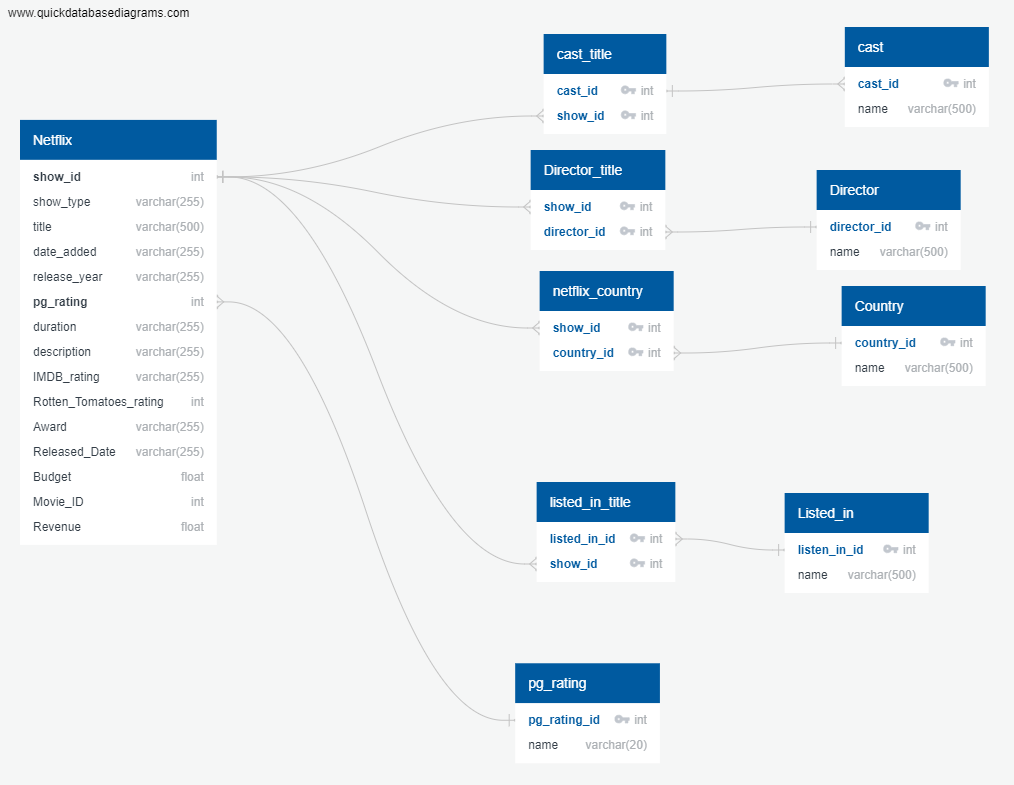
1. Extracted data is coming in different formats, hence data will be standardized
2. Database tables will be created and normalized
3. Data Frames will be merged if required
4. Filtering – Select only certain columns to load
5. Character Set Conversion and encoding handling
6. Conversion of Units of Measurements like Date Time Conversion, currency conversions, numerical conversions, etc.
7. Data threshold validation check. For example, movie release date cannot be before the year 1900
8. Data flow validation from the staging area to the intermediate tables.
9. Required fields should not be left blank.
10. Cleaning (for example, mapping NULL to 0)
11. First normal form, split a column into multiples and merging multiple columns into a single column.
12. Transposing rows and columns
13. Use lookups to merge data

Necessary tables and the relations between them was designed.

The following were considered to separate the related data from each other and have proper connections between the tables.

Ex: Movie Director data is kept separate from Budget data in two different tables.

# Schema Design:



There are some fields that have more than one information, such as Director or the Country of movie that is Released.

We normalized this information and added properly to the table. In this process, we removed the duplicates, NaN and configured the proper indexing as well.



The Result is:



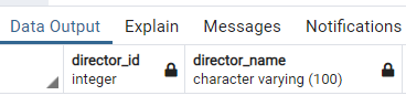
# Creating Database table:

Tables:

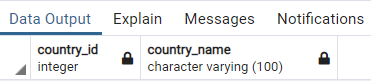
### Title Table:



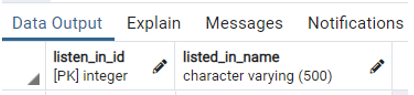
### Director Table:



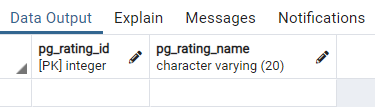
### Country Table:



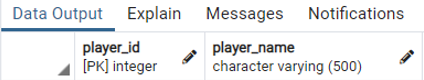
### Listed\_in Table:



### PG\_Rating Table:

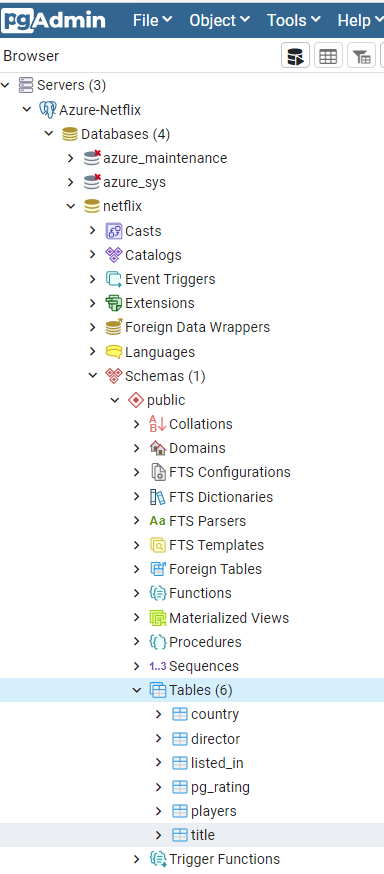


### Player Table:



Load on to SQL

Loading ? to SQL Table



Final Database

Findings

## sql db mODEL

The following is the SQL Data Model used in this project:

adult: TRUE/FALSE  
backdrop\_path: varchar(255)  
genre\_ids: Numbers (series)  
id: varchar (10)  
original\_language: char (2)  
original\_title: varchar (255)  
overview: varchar (1500)  
popularity: float  
poster\_path: varchar(255)  
release\_date: date  
title: varchar (255)  
video: TRUE/FALSE  
vote\_average: float  
vote\_count: int (edited)