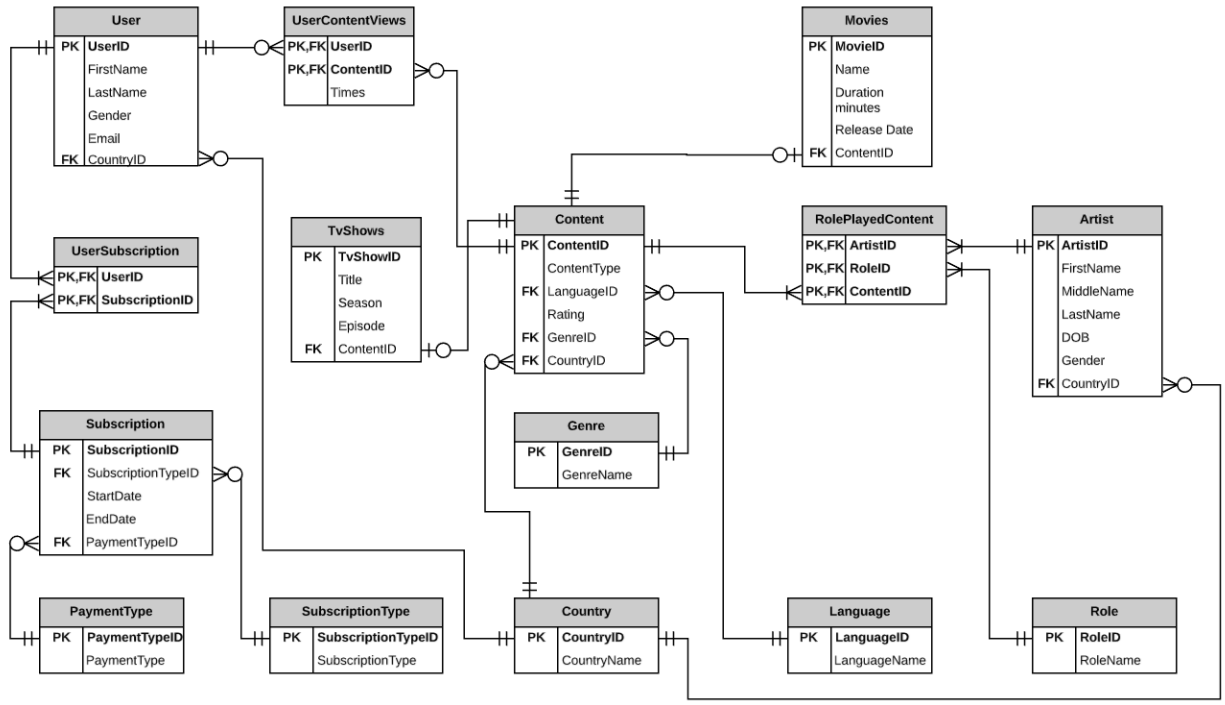
Project Topic: Netflicks database

Team members: Shilpa, Shweta Chaudhary.

Purpose: The purpose of the database is to maintain the data related to movies, TV shows, artists, and users of Netflicks, a hypothetical version of Netflix. It will be used by Netflicks engineers to maintain and perform analytics on the user pool, contents, and artists.

ERD of Netflicks:



Business Problems Addressed:

The proposed design can be used to address the following use cases:

• Use predictive analysis to figure out the most viewed content.

• Quantify the number of users by country, thereby determining the business outreach of Netflicks across different countries.

• The yearly trend in user subscription can be calculated based on the subscription type.

Business Rules:

- Each user may have one and only one payment type (credit or debit)
- Each payment may be related to zero or more users (E.g: *all users paid with credit card*).
- Each user may have one or more UserSubscriptions.
- Each subscription may have one or more UserSubscriptions.
- Each UserSubscription is related to one and only one User.
- Each UserSubscription is related to one and only one Subscription.
- Each user may be related to only one country.
- Each country may have zero or more users.
- Each user may have zero or more views.
- Each UserContentViews may have only one user.
- Each movie is a part of one and only one content.
- Each content may have zero or one movie.
- Each tvShows is a part of one and only one content.
- Each content may have zero or one tv show.
- Each country may have zero or more content.
- Each content may have only one country.
- Each genre may have zero or more content.
- Each content may have only one genre.
- Each language may have zero or more content.
- Each content may have only one language.
- Each UserContentViews may have one and only one content.
- Each content may have zero or more views.
- Each role may be associated with one or more contents.
- Each content may have one or more roles played.
- Each country may have zero or more artist.
- Each artist may have one and only one country.
- Each role may be played by one or more artists.
- Each artist may perform in one or more contents.
- Each artist may play one or more roles.
- Each RolePlayedContent associates a content with a role played by an artist.

Design Decision:

Entity Name	Why Entity included	How Entity is related to other Entities
User	One of the primary purposes of Netficks database is to collect information about users along with their email, subscription info, payment types, start and end dates, and the nature of viewed content.	The User entity is related to corresponding views, subscription, and country entities. Each user may have zero or more UserContentViews, one or more subscriptions (in the case a previous user unsubscribed and re-subscribed or changed subscription type), and one and only one country.
Country	A separate Country entity allows us to populate the countries separately. This entity lets the team store the country information specific to each User, Content, and Artist. Such information helps the team gather analyze which country has more number of users, which country's content has been more watched and how does artist count vary across countries.	A Country is related to User, Content, Artist entities. Each country may be related to zero or more users, zero or more contents, and zero or more artists depending on the absence or presence of users, contents, and artists from a given country, respectively.
UserContentViews	The team is interested to track the view count of the users who watched a specific content which is useful to provide recommendations for users based on what they watched previously.	Views entity is related to User and Content entities. Each view corresponds to one and only one user, and one and only one content.
Subscription	Another key function of the database is to understand user subscription type, mode of payment, and the duration of the subscription.	Subscription entity is related to User, PaymentType, SubscriptionType entities. Each subscription consists of one subscription type and payment type, and one or more users (in case of more than one user subscribing to the same type and payment mode on the same day).
PaymentType	The team will monitor which PaymentType a user subscription is associated with.	PaymentType is related to the subscription entity. Each Payment Type (credit or debit) can be associated with zero or more subscriptions. Zero modality is possible if all subscriptions were made using other types of payment - such as all subscriptions were made using a credit card and hence no debit card was used.

SubscriptionType	The Subscription type determines the duration of subscription for which the user signed up. It is useful to analyze the nature of subscription types undertaken by users from different countries.	SubscriptionType is related to Subscription entity. Each subscription type can be associated with zero or more subscriptions. Zero modality is possible if all subscriptions were made using other subscription types - for example all subscriptions were annual and hence no monthly subscriptions were made.
Content	A primary function of the database is to understand what kind of content is offered to the users. The content entity also stores the language, genre, which countries content we are showing to users, and to monitor which content is getting how many views.	Content is related to Movies, Views, RolePlayedContent, Language, Genre, Country Entities. A content is related either one movie or one TV show. Each content is also related to only one language, only one country, and only one genre.
Movies	The team is interested in showing the details of movies to the user to make it easier for the user to select the movies according to particular release date, duration, language, country, and genre. The last three attributes are found in the Content.Also, the release date allows us to compute the then age of the artists acting in it given their DOB to perform role analytics by age.	Movie Entity is related to content entity such that each movie is either a part of zero or one content. For example, if a content is a TV show it is related to zero movies and if a content is a movie, then it is related to only one movie.
Genre	The team is interested to enable the user to select what content the user would like to see under different type of genre based on their previous views. It also helps the company to determine which genres attract most number of views.	Genre is related to Content entity such that a genre is a part of zero or more contents. The zero modality is possible if a new genre is entered which doesn't have a corresponding content yet.
Language	The Language entity provides language information about the content. This allows analytics to be performed on how the overall content is spread across different languages.	Language entity is related to content such that each language is a part of zero or more contents. The zero modality can arise if there's no content available in a particular language.
TvShows	The team is interested in showing the details of movies to the user to make it easier for the user to select the movies according to particular season, episode, release date, duration, language, country, and genre. The last three attributes are found in the Content. Also, the	TV show entity is related to content entity such that each TV show is either a part of zero or one content. For example, if a content is a movie it is related to zero TV shows and if a content is a TV show, then it is related to only one TV show.

	release date allows us to compute the then age of the artists acting in it given their DOB to perform role analytics by age.	
RolePlayedContent	This entity depicts the relation between an artist playing a role in a movie or TV show (content).	RolePlayedContent related to Artist, Roles, and Content entities because a role is played by an artist in a content. Each RolePlayedContent record is related to exactly one artist, one role, and one content.
Artist	The team wants to enable a user to watch a content of a particular artist. The artist entity also stores the gender, DOB, and country information that enables artist analytics by gender, country, or age. The age of an artist playing a role in a content can be calculated by the Artist DOB and the release date of the content.	Artist related to RolePlayedContent and Country entities. Each artist belongs to a country, and is associated with one or more records in the RolePlayedContent. This is because an artist can play multiple roles in multiple contents and play a minimum of one role in at least one content to enter the database as an artist.
Role	The Roles entity captures the type of role an artist played in a content. The role names could be lead, director, cameraperson, etc.	Roles related to RolePlayedContent because each role is played by an artist in a content. Each role is played by at least one artist from one content, thereby sharing a one or many relationship with RolePlayedContent entity.
UserSubscription	This entity prevents the many-to-many relationship that may occur between *User* and *Subscription* entities otherwise.	UserSubscription is related to User and Subscription entities. Every UserSubscription is associated with only one User and only one Subscription.