Normalization: Checking if our tables are dependency preserving.

1. User(<u>user_id</u>(PK, NN), username, firstName, lastName, email, password, registrationDate, subscriptionID(FK))

FD = { user_id -> username,
      user_id -> firstName,
      user_id -> lastName,
      user_id -> email,
      user_id -> password,
      user_id -> registrationDate,
      user_id -> subscriptionID
      }
$(user\_id)^+$ = User => is CK, prime attribute is {user_id}
User is in 3NF => Dependencies are preserved

2. Subscription(<u>subscriptionID</u>(PK, NN), subscriptionType, Price, duration)

FD = { subscriptionID -> subscriptionType,   (prime -> non-prime)
      subscriptionID -> Price,   (prime -> non-prime)
      subscriptionID -> duration   (prime -> non-prime)
      }
$(subscriptionID)^+$ = Subscription => is CK, prime attribute is {subscriptionID}
Subscription is in 3NF => Dependencies are preserved

3. Playlist(<u>playlist_id</u>(PK), user_id(FK), playlistTitle, description, creationDate)

FD = { playlist_id, user_id -> playlistTitle, description, creationDate }

$(playlist\_id, user\_id)^+$ = Playlist => is CK, prime attributes - {playlist_id, user_id}
Playlist is in 3NF, also in BCNF => Dependencies are preserved

4. Song(<u>song_id</u>(PK), songTitle, album_id(FK), artist_id(FK), duration, releaseDate)

FD = { song_id -> songTitle, duration, releaseDate
      song_id -> album_id,
      song_id -> artist_id
      }

$(song\_id)^+$ = Song => is CK, prime attribute - {song_id}
Song is in 3NF, also in BCNF => Dependencies are preserved

5. Album(album_id(PK), albumTitle, artist_id(FK), releaseDate)

FD = { album_id -> albumTitle, releaseDate
     album_id -> artist_id,
     }

$(album\_id)^+$ = Album => is CK, prime attribute - {album_id}
Album is in 3NF, also is in BCNF => Dependencies are preserved

6. Artist(artist_id(PK), artistName, nationality, dateOfBirth)

FD = { artist_id -> artistName,
     artist_id -> nationality,
     artist_id -> dateOfBirth
  }

$(artist\_id)^+$ = Artist => is CK, prime attribute - {artist_id}
Artist is in 3NF, also in BCNF => Dependencies are preserved

7. Genre(genre_id(PK), genreName)

FD = { genre_id -> genreName }

$(genre\_id)^+$ = Genre => is CK, prime attribute - {genre_id}
Genre is in 3NF, also is BCNF => Dependency is preserved

8. Award(award_id(PK, NN), artist_id(FK), awardName, year)

FD = { award_id -> artist_id,
     award_id -> awardName, year
  }

$(award\_id)^+$ = Award => is CK, prime attribute - {award_id}
Award is in 3NF, also is BCNF => Dependencies are preserved