CHAPTER 2

E R DIAGRAM AND RELATIONAL SCHEMA DIAGRAM

E R DIAGRAM

An entity relationship diagram, usually referred to as an e-r diagram represents the attributes, entities and relationships in a relational schema design.

In the fig 2.1 below entity types like album,artist,playlist ,user and tracks are represented using rectangular boxes in the e-r diagram.These are the tables of database.

The attributes which characterize the entities are represented in horizontal ovals, each attached to the entity type using a straight line. The attribute which is designated as the primary key is identified by underlining it within the horizontal oval.Here,track_id,track_name and genre are the attributes of track attribute.Track_id is the primary key.Playlist_id and Playlist_name are the attributes of Playlist entity,Playlist_id is the primary key of the playlist entity.user_id,user_name and password are the attributes of the user entity,user_id is the primary key .Artist_id ,artist_name and album_image are the attributes of the artist entity,Artist_id is the primary key.Album_id and album_name are the attributes of the album entity,album_id is the primary key.

Relationships like playlist_tracks,manages,album_tracks and creates are represented in diamond boxes which are attached to the entity types participating in the relationship using straight lines.Playlist_tracks is the relationship between tracks and playlist entities.Manages is the relationship between playlist and user entities.Album_tracks is the relationship between album and tracks.Creates is the relationship between album and artist entities.

The total participation of the entities participating in the relationship represented inside the rhombus is identified by two straight lines from the entity type to the diamond. Whereas, the partial participation is identified by a single line.

The cardinality ratios are as follows:

1. Track : playlist is of cardinality M:N as many playlists can have many tracks.
2. user: user is of cardinality 1:N as one user can manage many playlists.
3. artist :artist is of cardinality 1:N with album as one artist have many albums.
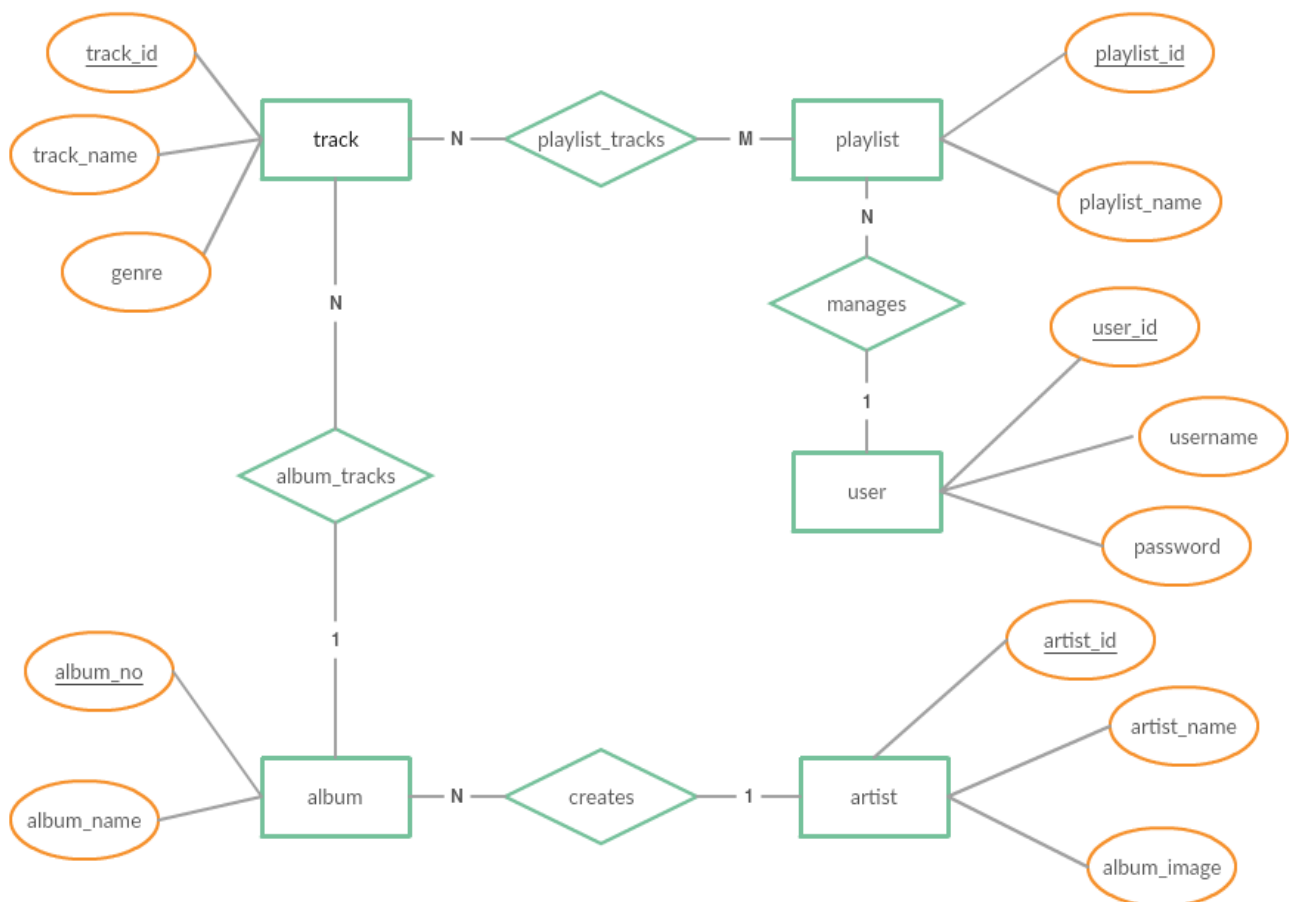4. album: album is of cardinality ratio 1:N with track as one album can have many tracks.

Fig 2.1 Entity relationship diagram

SCHEMA DIAGRAM

The term database schema refers to the description of the database that includes the database structure and various constraints on the database.

The schema diagram is in turn an illustrative display of the database schema.

In the fig 2.2 below,the primary keys are underlined and the referential integrity constraints are depicted by arrows pointing to the keys they reference.The list of tables are:

Album: This table stores the album_names,album_images. The primary key is album_id. Artist_id acts as foreign key.

Artist: This table stores the artist names and information regarding track record of the artists. The primary key is artist_id**.**

Playlist: This table stores the playlist names created by users. Playlist_id is Primary key.

Track: This table stores all the tracks names and the genre of the tracks.Track_id is the primary key.Artist_id and playlist_id are the foregin keys.

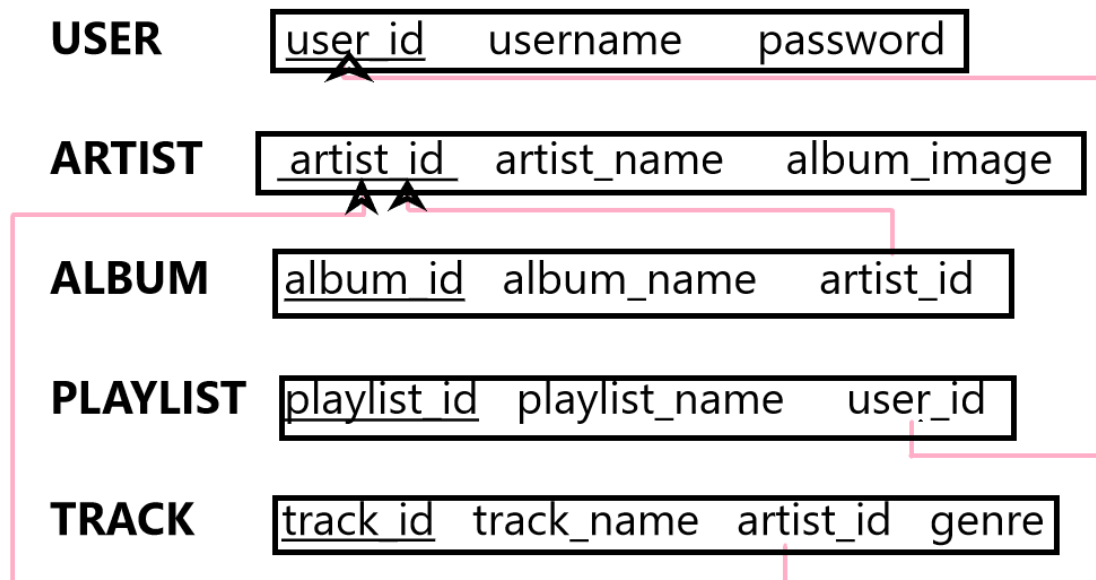User: This table stores the information about username and their password.user_id is the primary key.

FIG 2.2 Relational schema diagram