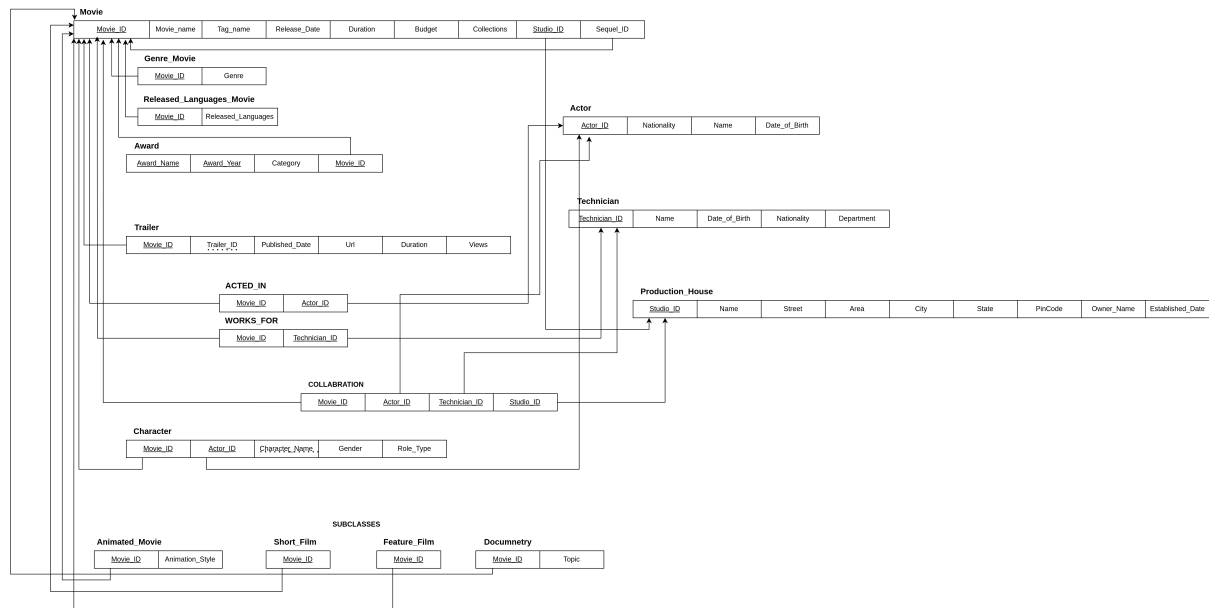


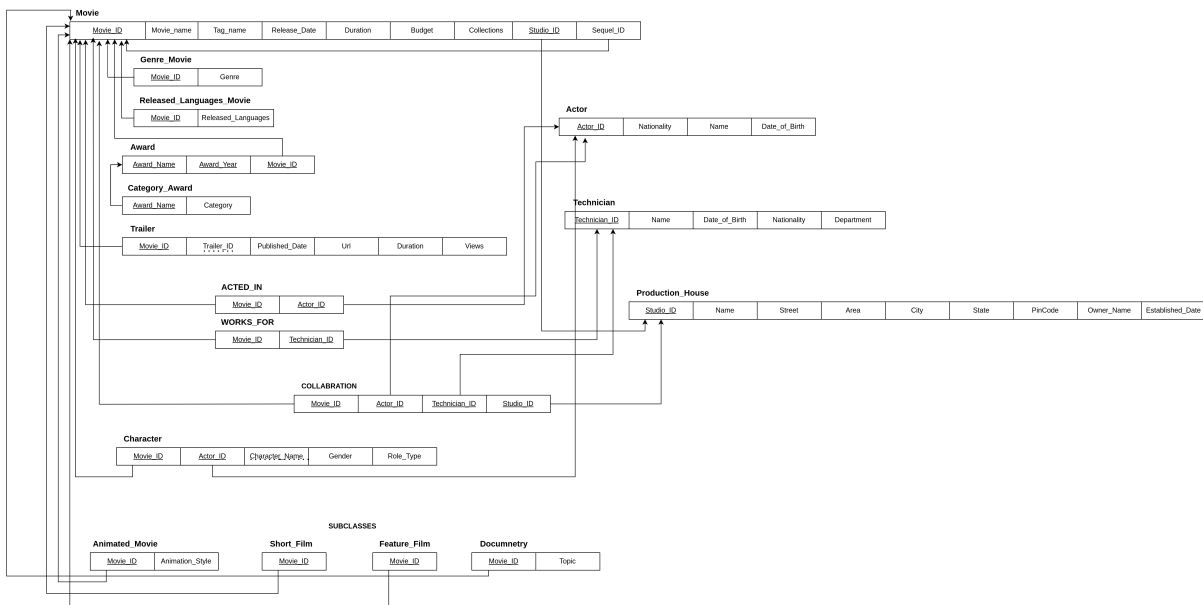
PHASE-3

TEAM-39

Relational diagram and 1NF:



2NF and 3NF:



Movies:

- **Attributes:** Movie_ID, Movie_Name, Tag_Name, Release_Date, Duration, Budget, Collections, Studio_ID(FK), Sequel_ID(FK)
- Sequel_ID comes from the recursive relation **SEQUEL**
- Studio_ID comes from the relation **PRODUCES**
- **Primary Key:** Movie_ID

1NF:

- Since all the attributes are atomic, **Movies** satisfy 1NF.

2NF:

- All the non-key attributes are fully functionally dependent on primary key (Movie_ID).
- So, Movies satisfy 2NF.

3NF:

- There are no non-key attributes that are dependent on another non-key attributes. So, no transitive dependencies are present.
- So, Movies satisfy 3NF

For converting ER diagram into relation model, we create separate tables for multivalued attributes.

- **Genre-Movies:**
 - Attributes are Movie_ID(PK), Genre.
- **Movies-Released Languages:**
 - Attributes are Movie_ID(PK), ReleasedLanguages.

For subclasses we created separate tables

- Animated Movie
 - Additional Attributes: Animation_Style
- Short_Film
- Feature_Film
- Documentary
 - Additional Attributes: Topic

All Subclasses will have Movie_ID as foreign key.

Production_House:

Attributes: Studio_ID, Name, Established_Date, Location Street, Area, City, State, PinCode, Owner_Name.

- **Primary Key:** Studio_ID

1NF:

- Since all the attributes are atomic, **Production_House** satisfy 1NF.

2NF:

- All the non-key attributes are fully functionally dependable on primary key (Studio_ID).
- So, Production_House satisfy 2NF

3NF:

- There are no non-key attributes that are dependent on another non-key attributes. So, no transitive dependencies are present.
- So, Production_House satisfy 3NF

Actor:

Attributes: Actor_ID, Name, Date_of_Birth, Nationality.

- **Primary Key:** Actor_ID

1NF:

- Since all the attributes are atomic, **Actor** Table satisfy 1NF.

2NF:

- All the non-key attributes are fully functionally dependable on primary key (Actor_ID).
- So, **Actor** Table satisfy 2NF.

3NF:

- There are no non-key attributes that are dependent on another non-key attributes. So, no transitive dependencies are present.
- So, **Actor** Table satisfy 3NF

Technician:

Attributes: Technician_ID, Name, Date_of_Birth, Nationality, Department

- **Primary Key:** Technician_ID

1NF:

- Since all the attributes are atomic, **Technician** Table satisfy 1NF.

2NF:

- All the non-key attributes are fully functionally dependable on primary key (Actor_ID).
- So, **Technician** Table satisfy 2NF

3NF:

- There are no non-key attributes that are dependent on another non-key attributes. So, no transitive dependencies are present.
- So, **Technician** Table satisfy 3NF

Award:

Attributes: Award_Name, Award_Year, Category, Movie_ID

- Movie_ID comes from **Movie** through relation **RECEIVED**.

- **Primary Keys:** Award_Name, Award_Year

1NF:

- Since all the attributes are atomic, **Award** Table satisfy 1NF.

2NF:

- Category which is a non-key attribute is dependent only on the Award_Name.
- So, we create another table Award-Category for Award_Name and Category.
- So now **Award** Table will satisfy 2NF.

3NF:

- There are no non-key attributes that are dependent on another non-key attributes. So, no transitive dependencies are present.
- So, **Award** Table satisfy 3NF

Character:

Attributes: Movie_ID, Actor_ID, Character_Name, Role_Type, Gender

- Movie_ID comes from **Movie** through relation **PLAYED IN&BY**.
- Actor_ID comes from **Actor** through relation **PLAYED IN&BY**.
- **Primary Keys:** {Actor_ID, Movie_ID}

1NF:

- Since all the attributes are atomic, **Character** Table satisfy 1NF.

2NF:

- All the non-key attributes are fully functionally dependable on primary key {Actor_ID, Movie_ID}
- So, **Character** Table satisfy 2NF.

3NF:

- There are no non-key attributes that are dependent on another non-key attributes. So, no transitive dependencies are present.
- So, **Character** Table satisfy 3NF

Trailer:

Attributes: Movie_ID, Trailer_ID, Published_Date, URL, Duration, Views

- Movie_ID comes from **Movie** through relation **HAS**.
- **Primary Keys:** Trailer_ID

1NF:

- Since all the attributes are atomic, **Trailer** Table satisfy 1NF.

2NF:

- All the non-key attributes are fully functionally dependable on primary key (Trailer_ID).
- So, **Trailer** Table satisfy 2NF.

3NF:

- There are no non-key attributes that are dependent on another non-key attributes. So, no transitive dependencies are present.
- So, Trailer Table satisfy 3NF.

Relationship Tables:

- **ACTED_IN:**
 - **Attributes:** Movie_ID, Actor_ID
 - **Primary Key:** {Movie_ID, Actor_ID}
- **WORKS_FOR:**
 - **Attributes:** Movie_ID, Technician_ID
 - **Primary Key:** {Movie_ID, Technician_ID}
- **COLLABORATION:**
 - **Attributes:** Movie_ID, Actor_ID, Technician_ID, Studio_ID
 - **Primary Key:** {Movie_ID, Actor_ID, Technician_ID, Studio_ID}

All the attributes of **ACTED_IN**, **WORKS_FOR** and **COLLABORATION** are atomic values.

So, they all satisfy 1NF.

Since There are no non-key attributes. All the tables satisfy 2NF, 3NF.

REFERENCE:

“Fundamentals of Database Systems Seventh Edition Chapters 9,14” for relation model design.