DBMS PROJECT
CineHub - Movies and Series Hub

GROUP ID :- T113

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Objective

The Main Objective is to develop a comprehensive online database for movies, TV shows, and video content that serves as the definitive source of information for consumers and professionals. It should provide detailed data on titles, cast, crew, ratings, box office, and awards. Ensure accuracy through partnerships with authoritative sources. Feature robust search, user-friendly interface, and data analysis capabilities. Implement a revenue model to sustain and enhance the constantly updated database. The goal is to create the go-to resource fostering a vibrant community around entertainment content.

Reason behind picking this project

The entertainment industry lacks a centralized, comprehensive source of reliable information about movies, TV shows, and video content. Creating a database like this addresses this gap by providing a one-stop repository serving movie enthusiasts, industry professionals, researchers, and businesses. It offers accurate, extensive data on titles, cast, ratings, and box office performance. Such a database enhances understanding of the entertainment world and fosters an engaged community around content.

Entity Relational Diagram
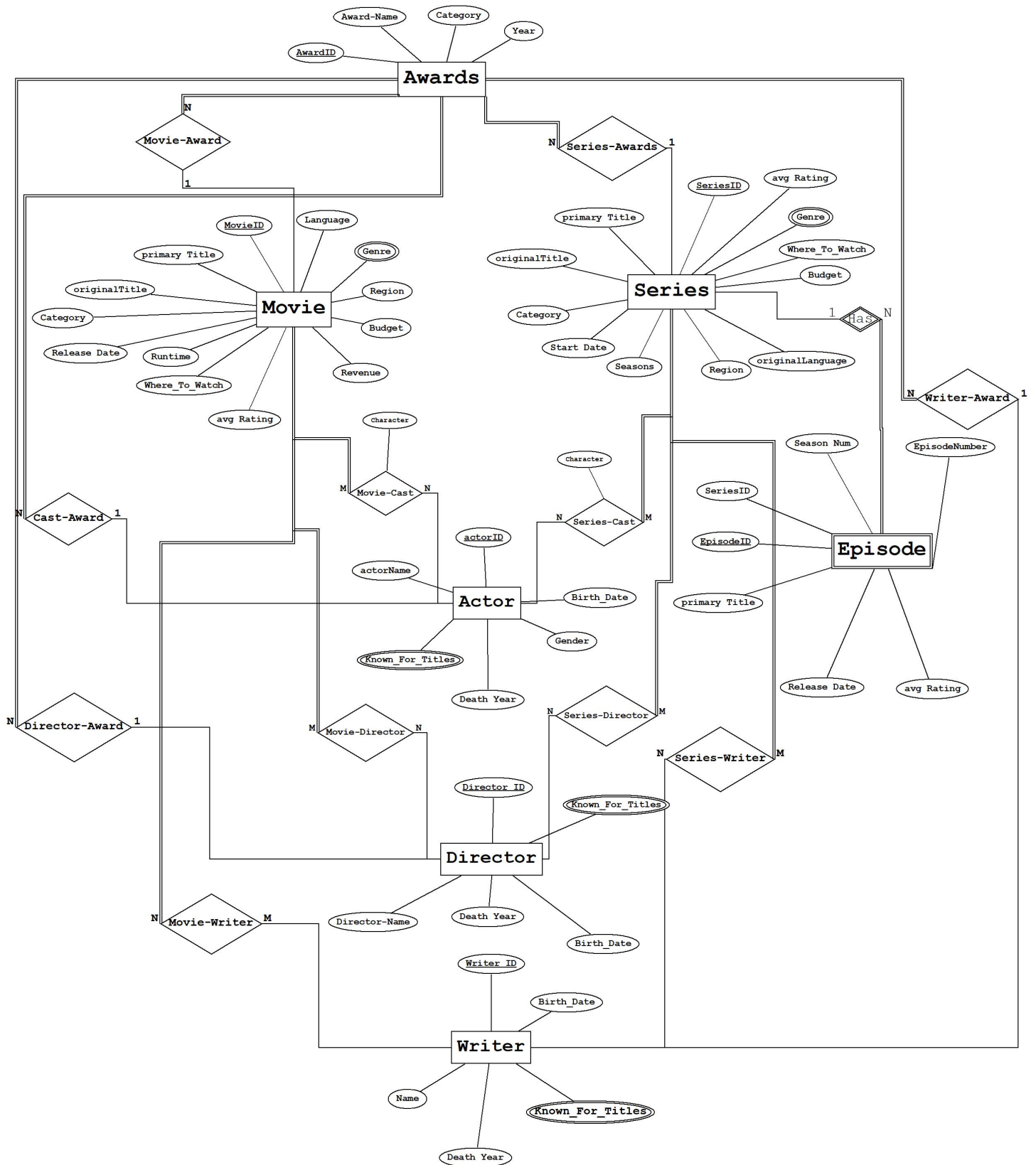
Relational Diagram
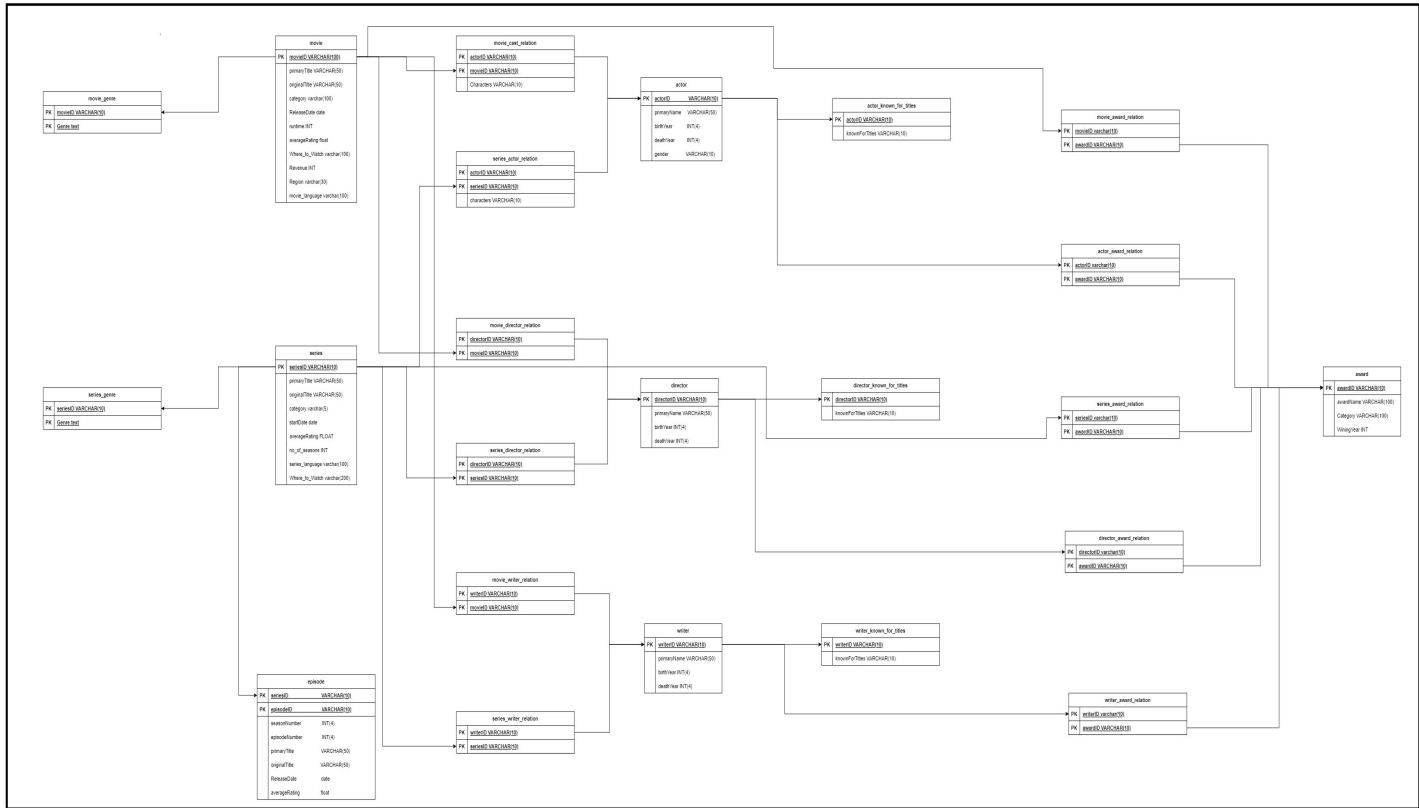
Normalistion Proof

1. Movies:

R {movieID, primaryTitle, originalTitle, category, ReleaseDate,runtime, averageRating, Where_to_Watch, Revenue, Region, movie_language}

Keys: movieID

Minimal FD:

$$movieID \rightarrow primaryTitle$$
$$movieID \rightarrow orginalTitle$$
$$movieID \rightarrow category$$
$$movieID \rightarrow ReleaseDate$$
$$movieID \rightarrow runtime$$
$$movieID \rightarrow averageRating$$
$$movieID \rightarrow Where\_to\_Watch$$
$$movieID \rightarrow Revenue$$
$$movieID \rightarrow Region$$
$$movieID \rightarrow movie\_language$$

$\{movieID\}^+$ = {movieID, primaryTitle, originalTitle, category, ReleaseDate, runtime, averageRating, Where_to_Watch, Revenue, Region, movie_language}

Thus, **movieID** is the key.

BCNF Proof:

For every minimal FD dependency listed above movieID is the candidate key, hence the relation is in BCNF.

2. Series:

R {primaryTitle, originalTitle, category, startDate, averageRating, no_of_seasons, series_langua Where_to_Watch}

Keys: seriesID

Minimal FD:

$$seriesID \rightarrow primaryTitle$$
$$seriesID \rightarrow originalTitle$$
$$seriesID \rightarrow category$$
$$seriesID \rightarrow startDate$$
$$seriesID \rightarrow averageRating$$
$$seriesID \rightarrow no\_of\_seasons$$
$$seriesID \rightarrow series\_language$$
$$seriesID \rightarrow Where\_to\_Watch$$

$\{seriesID\}^+$ = {primaryTitle, originalTitle, category, startDate, averageRating, no_of_seasons, series_language, Where_to_Watch}
Thus, **seriesID** is the key.

BCNF Proof:

For every minimal FD dependencies listed above seriesID is the candidate key, hence the relation is in BCNF.

3. Movie_Genre:

R {movieID, Genre}
Keys: {movieID, Genre}
$\{movieID, Genre\}^+$ = {movieID, Genre}
Thus, **{movieID, Genre}** is the key.

BCNF Proof:

Since there are no FDs and both the attributes are the key, hence the relation is in BCNF.

4. Series_Genre:

R {seriesID, Genre}
Keys: {seriesID, Genre}
$\{seriesID, Genre\}^+$ = {seriesID, Genre}
Thus, **{seriesID, Genre}** is the key.

BCNF Proof:

Since there are no FDs and both the attributes are the key, hence the relation is in BCNF.

5. Episode:

R {episodeID, seriesID, seasonNumber, episodeNumber, primary title, originalTitle, ReleaseDate, averageRating}

Keys:{episodeID, seriesID}

Minimal FD:

$$\{episodeID, seriesID\} \rightarrow seasonNumber$$
$$\{episodeID, seriesID\} \rightarrow episodeNumber$$
$$\{episodeID, seriesID\} \rightarrow primaryTitle$$
$$\{episodeID, seriesID\} \rightarrow originalTitle$$
$$\{episodeID, seriesID\} \rightarrow ReleaseDate$$
$$\{episodeID, seriesID\} \rightarrow averageRating$$

$\{episodeID, seriesID\}^{+}$ = R(episodeID, seriesID, seasonNumber, episodeNumber, primaryTitle, originalTitle, ReleaseDate, averageRating)

Thus, {episodeID, seriesID} is the key.

BCNF Proof:

For every minimal FD dependencies listed above episodeID, seriesID is the candidate key, hence the relation is in BCNF.

6. Actor:

R {actorID, primaryName, birthYear, deathYear, gender}

Keys: castID

Minimal FD:

$$actorID \rightarrow primaryName$$
$$actorID \rightarrow birthYear$$
$$actorID \rightarrow deathYear$$
$$actorID \rightarrow gender$$

$\{actorID\}^{+}$ = {actorID, primaryName, birthYear, deathYear, gender}

Thus, **actorID** is the key.

BCNF Proof:

For every minimal FD dependencies listed above actorID is the candidate key, hence the relation is in BCNF.

7. Movie_Actor_Relation:

R {actorID, movieID, characterPlayed}
Keys: {actorID, movieID}
Minimal FD:

$$\{actorID, movieID\} \rightarrow characterPlayed$$

$\{actorID, movieID\}^+$ = {castID, movieID, characterPlayed}
Thus, **{actorID, movieID}** is the key.
BCNF Proof:
For every minimal FD dependencies listed above {actorID, movieID} is the candidate key, hence the relation is in BCNF.

8. Series_Actor_Relation:

R {actorID, sereisID, characterPlayed}
Keys: {actorID, sereisID}
Minimal FD:

$$\{actorID, sereisID\} \rightarrow characterPlayed$$

$\{actorID, sereisID\}^+$ = {actorID, sereisID, characterPlayed}
Thus, **{actorID, sereisID}** is the key.
BCNF Proof:
For every minimal FD dependencies listed above {actorID, sereisID} is the candidate key,hence the relation is in BCNF.

9. Actor_Known_For_Titles:

R {actorID, knownForTitles}
Keys: {actorID, knownForTitles}
$\{actorID, knownForTitles\}^+$ = {actorID, knownForTitles}
Thus, **{actorID, knownForTitles}** is the key.
BCNF Proof:
Since there are no FDs and both the attributes are the key, hence the relation is in BCNF.

10. Director:

R {directorID, primaryName, birthYear, deathYear}
Keys: directorID
Minimal FD:

$$directorID \rightarrow primaryName$$
$$directorID \rightarrow birthYear$$
$$directorID \rightarrow deathYear$$

$directorID^+$ = {directorID, primaryName, birthYear, deathYear}
Thus, **directorID** is the key.
BCNF Proof:
For every minimal FD dependencies listed above directorID is the candidate key, hence the relation is in BCNF.

11. Director_Known_For_Titles:

R {directorID, knownForTitles}
Keys: {directorID, knownForTitles}
$\{directorID, knownForTitles\}^+$ = {directorID, knownForTitles}
Thus, **{directorID, knownForTitles}** is the key.
BCNF Proof:
Since there are no FDs and both the attributes are the key, hence the relation is in BCNF.

12. Movie_Director_Relation:

R {directorID, movieID}
Keys: {directorID, movieID}
$\{directorID, movieID\}^+$ = {directorID, movieID}
Thus, **{directorID, movieID}** is the key.
BCNF Proof:
Since there are no FDs and both the attributes are the key, hence the relation is in BCNF.

13. Series_Director_Relation:

R {directorID, seriesID}
Keys: {directorID, seriesID}
$\{directorID, seriesID\}^+$ = {directorID, seriesID}
Thus, **{directorID, seriesID}** is the key.
BCNF Proof:
Since there are no FDs and both the attributes are the key, hence the relation is in BCNF.

14. Writer:

R {writerID, primaryName, birthYear, deathYear}
Keys: writerID
Minimal FD:

$$writerID \rightarrow primaryName$$
$$writerID \rightarrow birthYear$$
$$writerID \rightarrow deathYear$$

$writerID^{+}$ = {writerID, primaryName, birthYear, deathYear}
Thus, **writerID** is the key.
BCNF Proof:
For every minimal FD dependencies listed above writerId is the candidate key, hence the relation is in BCNF.

15. Writer_Known_For_Titles:

R {writerID, knownForTitles}
Keys: {writerID, knownForTitles}
$\{writerID, knownForTitles\}^{+}$ = {writerID, knownForTitles}
Thus, **{writerID, knownForTitles}** is the key.
BCNF Proof:
Since there are no FDs and both the attributes are the key, hence the relation is in BCNF.

16. Movie_Writer_Relation:

R {writerID, movieID}
Keys: {writerID, movieID}
$\{writerID, movieID\}^{+}$ = {writerID, movieID}
Thus, **{writerID, movieID}** is the key.
BCNF Proof:
Since there are no FDs and both the attributes are the key, hence the relation is in BCNF.

17. Series_Writer_Relation:

R {writerID, seriesID}
Keys: {writerID, seriesID}
$\{writerID, seriesID\}^{+}$ = {writerID, seriesID}
Thus, **{writerID, seriesID}** is the key.

BCNF Proof:

Since there are no FDs and both the attributes are the key, hence the relation is in BCNF.

18. Award:

R {awardID, awardName, awardCategory, WiningYear}
Keys: awardID
Minimal FD:

$$awardID \rightarrow awardName$$
$$awardID \rightarrow awardCategory$$
$$awardID \rightarrow WiningYear$$

$awardID^+$ = {awardID, awardName, awardCategory, WiningYear}
Thus, **awardID** is the key.
BCNF Proof:

For every minimal FD dependencies listed above awardID is the candidate key, hence the relation is in BCNF.

19. Movie_Award_Relation:

R {movieID, awardID}
Keys: {movieID, awardID}
$\{movieID, awardID\}^+$ = {movieID, awardID}
Thus, **{movieID, awardID}** is the key.
BCNF Proof:

Since there are no FDs and both the attributes are the key, hence the relation is in BCNF.

20. Series_Award_Relation:

R {seriesID, awardID}
Keys: {seriesID, awardID}
$\{seriesID, awardID\}^+$ = {seriesID, awardID}
Thus, **{seriesID, awardID}** is the key.
BCNF Proof:

Since there are no FDs and both the attributes are the key, hence the relation is in BCNF.

21. Actor_Award_Relation:

R {actorID, awardID}
Keys: {actorID, awardID}
$\{actorID, awardID\}^+ = $ {actorID, awardID}
Thus, **{actorID, awardID}** is the key.
BCNF Proof:
Since there are no FDs and both the attributes are the key, hence the relation is in BCNF.

22. Director_Award_Relation:

R {directorID, awardID}
Keys: {directorID, awardID}
$\{directorID, awardID\}^+ = $ {directorID, awardID}
Thus, **{directorID, awardID}** is the key.
BCNF Proof:
Since there are no FDs and both the attributes are the key, hence the relation is in BCNF.

23. Writer_Award_Relation:

R {writerID, awardID}
Keys: {writerID, awardID}
$\{writerrID, awardID\}^+ = $ {writerID, awardID}
Thus, **{writerID, awardID}** is the key.
BCNF Proof:
Since there are no FDs and both the attributes are the key, hence the relation is in BCNF.

DDL Script:

Attached in Zip

Data Insertion Script:

Attached in Zip

SQL Queries:

Attached in Zip