Project: Movie Recommendation System

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Final ER Schema
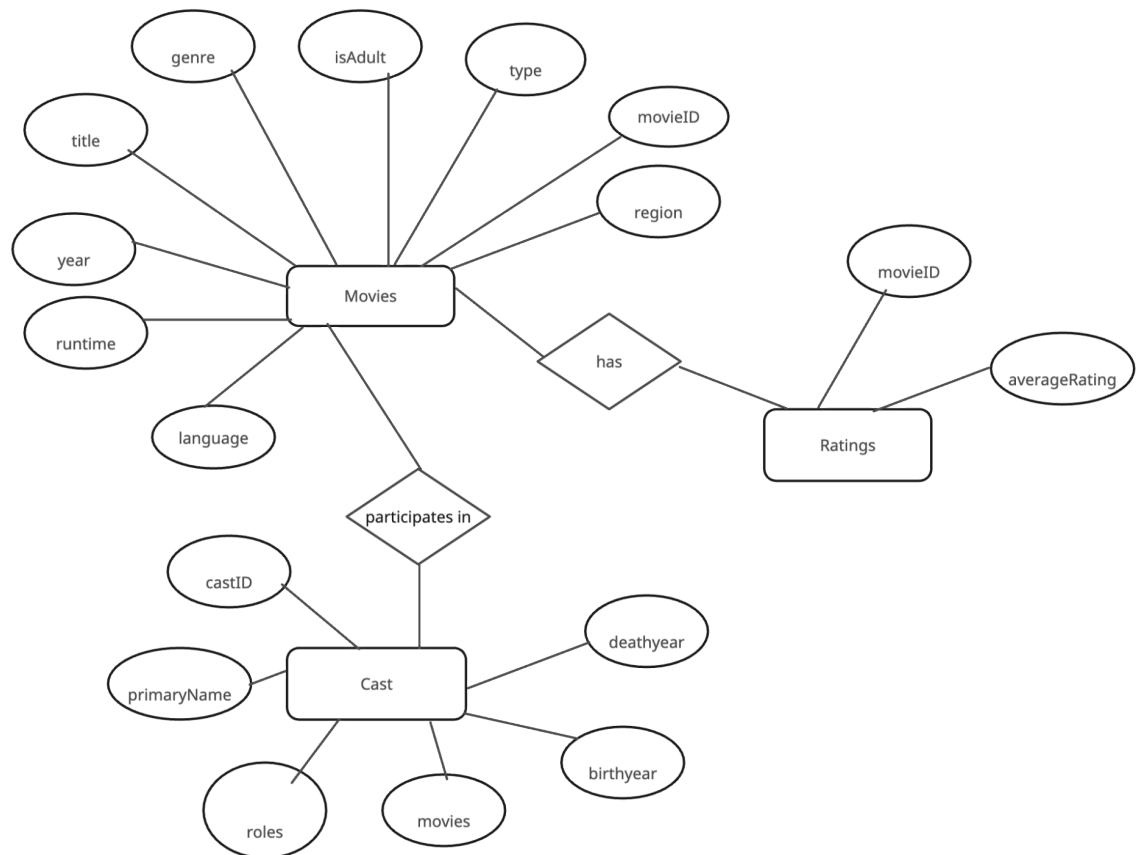
Final Relational Schema in Normal Form

-- Create movies table

```sql
CREATE TABLE movies (

    movieID VARCHAR(255) PRIMARY KEY,

    region VARCHAR(255),

    language VARCHAR(255),

    types VARCHAR(255),

    title VARCHAR(255),

    isAdult INT,

    year INT,

    runtime INT,

    genres VARCHAR(255)

);
```

-- Create cast table

```sql
CREATE TABLE movie_cast (

    castID VARCHAR(255) PRIMARY KEY,

    primaryName VARCHAR(255),

    birthyear INT,
```

```sql
    deathyear INT,

    roles VARCHAR(255),

    movies VARCHAR(255)

);

-- Create ratings table

CREATE TABLE ratings (

    movieID VARCHAR(255),

    averageRating FLOAT,

    FOREIGN KEY (movieID) REFERENCES movies(movieID)

);

-- Create participates table to represent the many-to-many relationship between movies
and cast members

CREATE TABLE participates (

    movieID VARCHAR(255),

    castID VARCHAR(255),

    PRIMARY KEY (movieID, castID),

    FOREIGN KEY (movieID) REFERENCES movies(movieID),

    FOREIGN KEY (castID) REFERENCES movie_cast(castID)

);
```

Normal Form

- **_First Normal Form (1NF)_**: The given schema is already in 1NF because it doesn't contain repeating groups, and each column holds atomic values.

- **_Second Normal Form (2NF)_**: The schema is in 2NF if there are no partial dependencies on any candidate key. In this schema, the primary key for the movies table is movieID, and the attributes (genre, runtime, region, isAdult, language, startYear, title, endYear) are fully functionally dependent on the entire primary key. Therefore, it is in 2NF.

- **_Third Normal Form (3NF)_**: The schema is in 3NF if there are no transitive dependencies. There are no transitive dependencies in this schema, so it is in 3NF as well.

- **_Summary_**: The given schema is already in at least 3NF. There is no need for further normalization based

Open Questions for Phase 4

- User Experience (UX):
  - How can the website provide a seamless and enjoyable user experience?
  - What features will enhance user engagement and satisfaction?
  - How can the design be intuitive for users of different technical abilities?
- Content and Database:
  - How will we collect and update movie data? Will it be manual or automated?