



Computer Science Department

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Database Design

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Declaration:

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Table of Contents

Introduction 3

Entity Relations and Attributes (ERD) 4

Entity Relationships..... 8

Entity relationship diagram10

Relational schema.....11

Introduction

The purpose of this assignment was to create the ERD and the relational schema of the database of IMDB which is a website that stores and shares various important information about different kinds of motion pictures. The goal was to pinpoint the important information from the website and then separate each of them into entities and attributes while also relationships between each entity. For the student's work to be simpler, the ERD had to come out only from screenshots provided by the lecturer.

Entity Relations and Attributes (ERD)

The ERD contains nine entities with attributes, while one of them is a weak entity. These entities are about people who have different jobs for different kinds of motion pictures while also awards that exist in competitions and reviews that users make for movies, tv-series, or episodes. Below each of these will be listed and a justification will be provided for each entity.

● Motion Picture - Entity

Attributes

1. Release Date
2. Rating
3. Description
4. Title

Relations

1. Tv-Series
2. Movie
3. Award
4. Genre
5. Person
6. Review

Justification: The name Motion Picture was selected for this entity because it can be either a movie or a tv-series. Many people can have different jobs for motion pictures. Motion pictures also have different genres. What is more, a movie or a series can be nominated or win an award. Finally, many users of the website can make reviews for every kind of motion picture.

Note that the underlined attributes are primary keys.

● TV-Series – Entity

Attributes

1. Num_Of_Seasons
2. Start Date
3. End Date
4. Series-ID

Relations

1. Episode
2. Motion Picture

Justification: TV-Series is a kind of motion picture and every TV-Series has episodes.

● **Movie** – Entity

Attributes

1. Duration
2. Movie-ID

Relations

1. Motion Picture

Justification: A movie is a kind of motion picture.

● **Episode** – Weak Entity

Attributes

1. Air Date
2. Description
3. Season
4. Title

Relations

1. Person
2. TV-Series
3. Review

Justification: Episodes are parts of TV-Series. Many people, and more specifically actors can appear as guest stars in some episodes. Moreover, reviews can also be made at every episode of a TV-Series.

● **Person** - Entity

Attributes

1. ID
2. FName
3. LName
4. Bio
5. Date of Birth
6. Gender

Relations

1. Motion picture
2. Awards

Justification: A Person can have any type of job into a motion picture and can win and be nominated for any type of award.

- **Genre – Entity**

unique Attribute

1. name

Relations

1. Motion picture

Justification: A genre is a type of motion picture. A motion picture could have many types of genres and vice versa.

- **Competition – Entity**

Attributes

1. Name
2. Date
3. Location

Relations

1. Awards

Justification: A competition has a relation with awards. There is one competition that could be ending up with many awards.

- **Award - Entity**

Attributes

1. Name

Relations

1. Person
2. Motion Picture

Justification: An award is an entity that a person or a motion picture can be nominated or won at it has only a name as an attribute.

● **Review**– Entity

Attributes

1. Starts
2. Content
3. Date
4. Title

Relations

1. Episode
2. Motion picture

Justification: Many episodes could be reviewed and many motion pictures could be reviewed.

Entity Relationships

- **Motion picture**

A motion picture has a relationship <ISA> with [Movies] and [TV-Series] because both of those entities inherit the attributes of a motion picture. It also has a relationship <GENRE OF> with the [Genre] entity that specifies the type of each Motion picture. More relations of the motion picture are:

- <ACTS>
- <PRODUCES>
- <DIRECTS>
- <WRITES>

Those relationships connect the Motion picture entity with the [Person] one and they specify each different action or role a person can take inside a motion picture. Also, a motion picture is related to <WINS> and <IS NOMINATED> relationship with the [Award] entity that describes both situations a motion picture can be in controversy. The last relationship motion picture has is <REFERS TO> that connects it with the [Review], which is an action a user can perform for a motion picture.

- **Movie**

The entity [Movie] had the relation <ISA> with the entity [Motion Picture]. With that said it means that a motion picture is a movie. [Movie] also have their unique attribute (movie-ID), because they have to have a unique id that no other movie has. The other attribute (duration) shows the duration of the movie.

- **TV-Series**

The entity [Motion Picture] once again has a relation <ISA> with the entity [TV-series]. Which means that a motion picture is a tv-series. The tv-series also have their attributes (end-date), (start date), that shows the end-and-start date of the series. The attribute (num_of_seasons) presents how many seasons there are for a tv-series. the unique attribute (series-ID) has its ID that no other series has.

- **Episode**

The entity [TV-series] has a relation <HAS> with the entity [episode] with a relation 1:N. To interpret, the meaning of the relation is that tv-series has many episodes. The entity [Episode] is weak if you take into consideration that the entity can not exist without the entity [TV-series] in the database.

There is another relation N:M <guest start> within the entity [Episode] and [Person]. There could also be many guesting starts(which are the person(s)) in many episodes. The [episode] also has an N:M relation <refers to> with the entity [review], which describes that many episodes could be reviewed many times. The attributes (air date), (description), (season) specify the different kinds of

information that the entity has. The unique attribute (title) is unique because there could not be any other title at a specific episode and season with the same title.

- **Person**

A person is an entity that we use to be able to better describe each job that a worker on a motion picture can have using relationships. As mentioned above the [Person] entity has a relationship with [Motion Picture] that can be described as :

- <ACTS>
- <PRODUCES>
- <DIRECTS>
- <WRITES>

Those are all the roles a person can have and also the <ACTS> relationship has an attribute (Role) that describes which role the person had as an actor. Also, a person can be a guest star in the weak entity, this is described with the relationship <GUEST STAR>. A person can additionally <WIN> and <IS NOMINATED > for an award.

- **Genre**

Genre is an entity we created only to describe what type is a motion picture for example Documentary, Drama, Horror. Its only relationship is <GENRE_OF> with [Motion Picture] and it does what is described above.

- **Competition**

Competition's only relationship is <HAS> and relates it with [AWARD] to describe that competition has awards and it was created for all the different competitions a motion picture or an actor can participate.

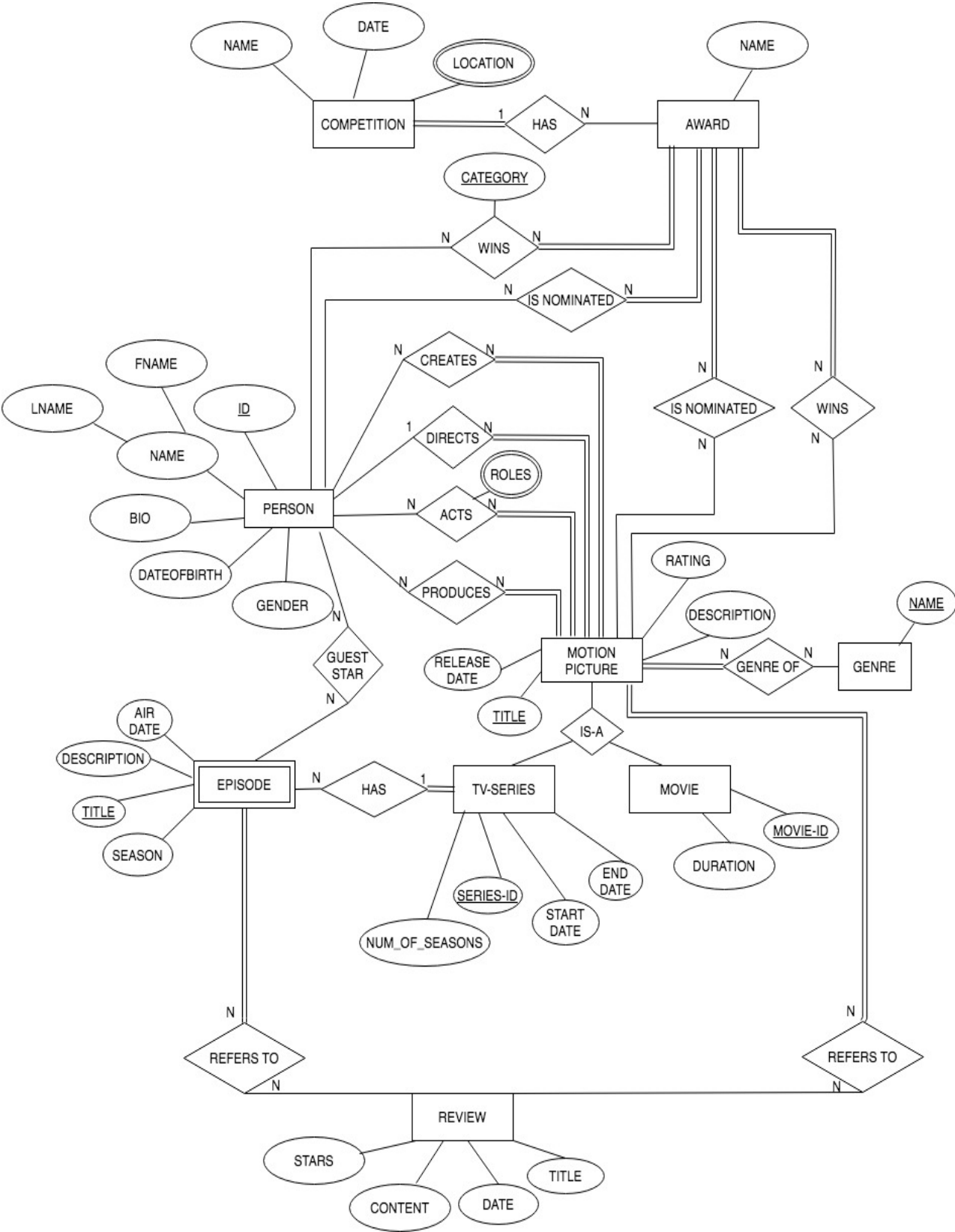
- **Award**

This entity has four relationships that are duplicates. It has two <WINS> and two <IS NOMINATED> relationships that relate it with [Motion Picture] and [Person], each entity taking one of each as mentioned above. The [Award] can be won by either a person or a movie or a series and it was created to store all the different awards that exist and won by other entities.

- **Review**

The entity [Review] is an entity that has an N:M relation <refers to> with both [motion picture] and [Episodes]. Many motion pictures and episodes can be reviewed many times. The attributes (stars),(content), (date), and (title) are specifications that could be checked if a review is going to be referred to a motion picture or an episode.

Entity relationship diagram



Relational schema

