

The Movie Theater database

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Potential Uses

The Movie Theater database has several very useful potential uses. For starters, there is no doubt that creating and using this database could be a very useful database for a large movie theater organization, such as Marcus or IMAX. This Movie Theater database could be a very useful collection of information for any Movie Theater Businesses, where they could have the ability to organize vast amounts of information regarding their different theater locations, movies playing in those theaters, movie times and dates, and even more. Not only could this Movie Theater database become a very important collection of information regarding the theater locations, movies, and times, but this database could potentially become a key part in a movie theaters business ability to track and record sales, expenses, and other financial information. The use of the Movie Theater database could extend even farther than the Movie Theaters themselves. This database could also potentially be used by individuals who attend movies, or who are huge movie fans. By using this Movie Theater database, individuals could record a very large collection of information about all of the movies they have attended over numerous years, recording the movie titles, theater locations, times, and much more. Not only would doing so be very intriguing for an individual, but it may also provide them with important financial information. Stretching even farther than movie theater businesses and movie fanatics, there is also a third potential use of this Movie Theater database. As one who lives in Los Angeles might also think, a third potential use of this database could be through actual actors and actresses themselves. Using the Movie Theater database could be a very useful way to record all of the times in which an actor or actress is displayed in a movie. By maintaining this large collection of information, one could keep track of all the times in which a movie was played when they

were in it. Similarly, this same potential use of the Movie Theater database could be used by studios or directors who want to know when their movies are being shown. In conclusion, there are numerous potential uses of this database, stretching from theaters themselves to actors and actresses.

Potential Actors and Users

Similarly to the potential uses of the Movie Theater database, there could also be many potential actors and users. According to Silberschatz, A., Galvin, P. B., & Gagne, G., in the textbook, *Operating system concepts*, actors of a database are “the people whose jobs involve the day-to-day use of a large database.” (Silberschatz et. al, 2018). These database workers are very crucial to the success and organization of databases such as the Movie Theater database. One potential actor of this database are database administrators. Every business who may use a database such as this one will need these administrators. For the Movie Theater database, these potential actors could be responsible for controlling access to the database, monitoring the use of the database, acquiring software and hardware resources that are required, and much more. According to Silberschatz, A., Galvin, P. B., & Gagne, G., database administrators are “accountable for problems such as security breaches and poor system response time.” (Silberschatz et. al, 2018). A second potential actor of the Movie Theater database could be database designers. As stated by Silberschatz, A., Galvin, P. B., & Gagne, G., database designers “are responsible for identifying the data to be stored in the database and for choosing appropriate structures to represent and store this data.” (Silberschatz et. al, 2018). As the Movie Theater database becomes used more and more, these potential users will be very important through interacting with potential groups of users. Potential database designers of this database

would also communicate with all users of the database, in order to understand and meet the requirements of the Movie Theater database. Several more potential users of the Movie Theater database include end users, standalone users, system analysts, application programmers, software developers, and software engineers. Another type of people who may be involved with the Movie Theater database are called workers behind the scenes. According to Silberschatz, A., Galvin, P. B., & Gagne, G., “others are associated with the design, development, and operation of the DBMS software and system environment. These persons are typically not interested in the database content itself.” (Silberschatz et. al, 2018). The first potential worker behind the scenes of the Movie Theater database could be DBMS system designers, who are in charge of designing and implementing modules and interfaces as a software package. Tool developers are another potential designers of this database. These developers would be in charge of designing the software packages in which facilitate database modeling and design, database system design, and improved performance. Operators and maintenance personnel are also potential workers behind the scenes on the Movie Theater database. The textbook states that these workers are “responsible for the actual running and maintenance of the hardware and software environment for the database system.” (Silberschatz et. al, 2018).

Data









The Movie Theater database contains very important data regarding movies, theaters, times, and much more. In the Movie Theater database, there is data stored into files that represents the movie name, theater, and time. All of this data is split up into three separate files, or as stated by Silberschatz, A., Galvin, P. B., & Gagne, G., “a collection of records that may or may not be ordered.” (Silberschatz et. al, 2018). In figure one below, each MOVIES record

includes data to represent the movies identification number (Movie_ID), as well as the movies name (Movie_Name). As shown below, the data types for the Movie_ID are numerics, and the data type for the Movie_Name are character data types. This record is important for the Movie Theater database system because it allows for the addition of data regarding specific movies.

Figure One. MOVIES File

MOVIES > List All
 ▶ Reports & Charts

New MOVIES More ▼ **4 MOVIESES**







	Movie_ID	Movie_Name
 	12987	The Godfather
 	19868	A Few Good Men
 	17698	The Shawshank Redemption
 	13762	Forrest Gump

The second file or collection of information in the Movie Theater database is THEATERS. In figure two below, each THEATERS record includes data to represent the theaters identification number (Theater_ID), as well as the theaters name (Theater_Name). Similarly to the MOVIES file in figure one, figure two shows that the data types for the Theater_ID are numerics, and the data type for the Theater_Name are character data types. This record is important for the Movie Theater database system because it allows for the addition of data regarding specific theaters.

Figure Two. THEATERS File

THEATERS > **List All**
 ▶ Reports & Charts

New THEATERS More ▼ 3 THEATERSES









	Theater_ID	Theater_Name
 	107	Filmology 8
 	105	Screen 12 North
 	103	Cine 20 West

The third file in the Movie Theater database is titled MOVIE_TIMES. In figure three below, each MOVIE_TIMES record includes data to represent the movies identification number (Movie_ID), the theaters identification number (Theater_ID), and the movie time (Movie_Time). Figure three shows that the data types for the Movie_ID and Theater_ID are numerical data types, and the data type for the Movie_Time are a mic of numerical data types and character data types, representing the specific time and date in which the movie was shown. This record is important for the Movie Theater database system because it allows for the addition of data regarding the specific movie times and dates.

Figure Three. MOVIE_TIMES File

MOVIE_TIMES > **List All**
 ▶ Reports & Charts

New MOVIE_TIMES More ▼ 4 MOVIE_TIMESES

	Movie_ID	Theater_ID	Movie_Time
 	12987	107	02-14-2016 07:00 PM
 	19868	103	01-15-2015 09:00 PM
 	17698	105	03-06-2014 07:05 PM
 	13762	103	02-05-2013 07:00 PM

Tables, Fields, and Keys

The Movie Theater database consists of several tables, fields, and keys, which are all crucial in providing the information regarding movies, theaters, and times. A table within a database is made up of records and fields that consist of data. Tables all hold different, but related, subjects in which hold and maintain specific data. In the Movie Theater database, each table is laid out very similar, with different rows, columns, and keys. Figure four below shows the three different tables in the Movie Theater database, displayed side by side. The first table, MOVIES, consists of two columns and four rows. The four rows in this table display records that consist of fields, containing specific data. Just like the two other tables in this database, as the Movie Theater database would continue to grow and expand, more information will be added, expanding the number of rows, columns, and fields in these tables. A field is a single piece of data that is subject of a record. In this database, the three tables all consist of numerous

fields, such as Movie_ID. Keys in a database table are data items that exclusively identify a record. Also, keys generate relationships among different database tables. In the first table, MOVIES, the primary key is Movie_ID, followed by the foreign key Movie_Name. The second table in the Movie Theater database is titled THEATERS. This table consists of two columns and three rows. The primary key in this table is Theater_ID, followed by the foreign key Theater_Name. Each record in this table also contains two fields, which are Theater_ID and Theater_Name. The third table in the Movie Theater database is titled MOVIE_TIMES. This table consists of two columns and four rows. The primary key in this table is Movie_ID, followed by the foreign keys Theater_ID and Movie_Time.. Each record in this table also contains three fields, which are Theater_ID and Movie_ID, and Movie_Time.

Figure Four. Table Designs

MOVIES

Movie_ID	Movie_Name
12,987	The Godfather
19,868	A Few Good Men
17,698	The Shawshank Redemption
13,762	Forrest Gump

THEATERS

Theater_ID	Theater_Name
107	Filmology 8
105	Screen 12 North
103	Cine 20 West

MOVIE_TIMES

Movie_ID	Theater_ID	Movie_Time
12,987	107	02-14-2016 07:00 PM
19,868	103	01-15-2015 09:00 PM
17,698	105	03-06-2014 07:05 PM
13,762	103	02-05-2013 07:00 PM

Figure five, as shown below, displays screenshots of the new tables after I have implemented my own data. I have added two new movies, each containing a new Movie_ID and Movie_Name. Also, I added one new theater, which created a new Theater_ID and Theater_Name. Finally, I added an additional movie time, creating a new Movie_Time attribute.

Figure Five. New Data Additions

MOVIES

Movie_ID	Movie_Name
15,907	Happy Gilmore
12,987	The Godfather
19,868	A Few Good Men
17,698	The Shawshank Redemption
13,762	Forrest Gump

THEATERS

Theater_ID	Theater_Name
109	Moviez Plus
107	Filmology 8
105	Screen 12 North
103	Cine 20 West

MOVIE_TIMES

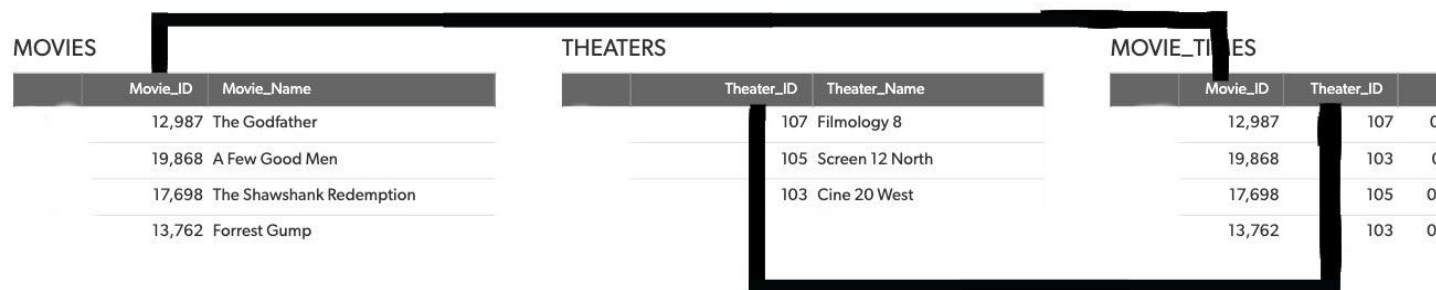
Movie_ID	Theater_ID	Movie_Time
15,907	109	04-18-2012 07:30 PM
12,987	107	02-14-2016 07:00 PM
19,868	103	01-15-2015 09:00 PM
17,698	105	03-06-2014 07:05 PM
13,762	103	02-05-2013 07:00 PM

Relationships

In every database, there are many relationship types, sets, and instances. According to Silberschatz, A., Galvin, P. B., & Gagne, G., “A relationship type R among N entity types E1, E2, . . . , En defines a set of associations—or a relationship set—among entities from these entity types.” (Silberschatz et. al, 2018). Every instance of a relationship within a database is an

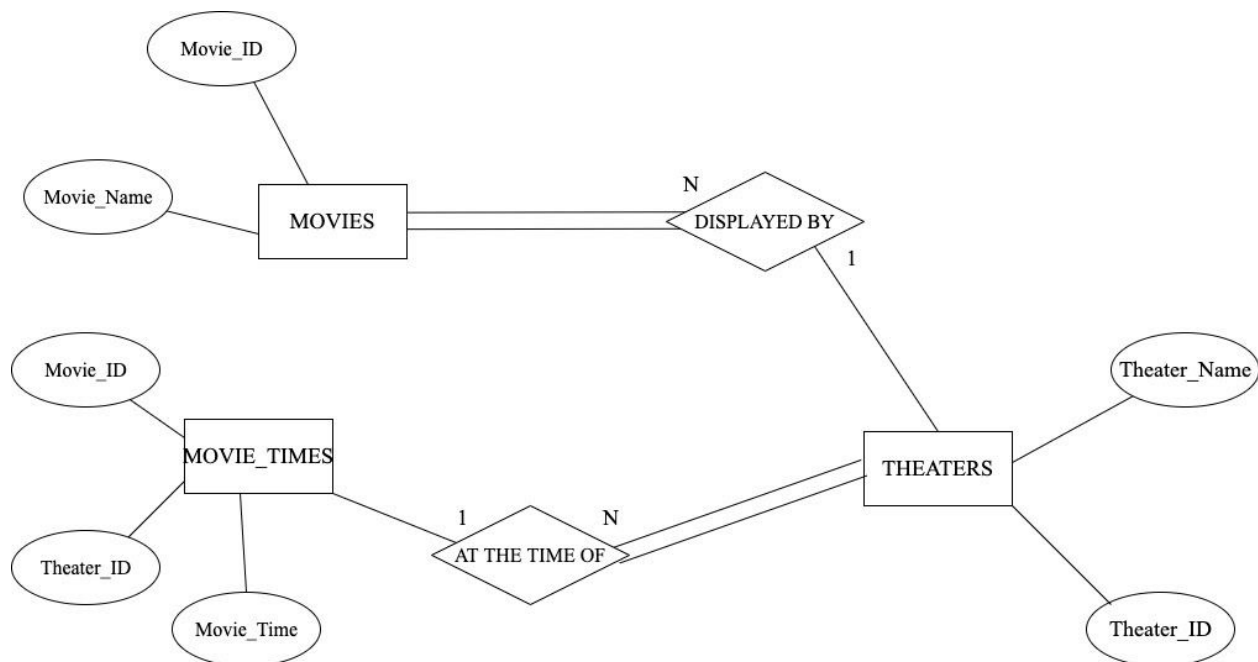
association of entities where the association includes one entity from each entity type. According to Silberschatz, A., Galvin, P. B., & Gagne, G., “Each such relationship instance r_i represents the fact that the entities participating in r_i are related in some way in the corresponding miniworld situation.” (Silberschatz et. al, 2018). Entity relationship diagrams, or ER models, represent all of the entities inside a database and their relationships to each other. In the ER diagram, entity types are rectangular boxes enclosing the entity type. Attribute names, in the ER diagram, are located inside of ovals and are attached to their entity type. In the Movie Theater database, there are several relationships. In figure six below, it is shown that the relationships in the Movie Theater database system exist between all three entities. One relationship in this database is located between the entities ‘MOVIES’ and ‘MOVIE_TIMES’. The relationship between these two entities lies within the attribute ‘Movie_ID’ because both of the entities hold this attribute. The second relationship in this database exists between the entities ‘THEATERS’ and ‘MOVIE_TIMES’. As shown below, the attribute ‘Theater_ID’, exists in both of the entities. Figure six shows the relationships in the Movie Theater database.

Figure Six. Relationships



The environment of the Movie Theater database is described in the ER diagram below. In this diagram, the entities are located inside the rectangular objects, and the attributes are located inside the ovals. As shown in the ER diagram, the attributes of each entity are connected to each other by a single line. The double lines in the diagram represent total participation of each entity. Single lines represent partial participation among the entities.

Figure Seven. ER Diagram



Recommendations for Improvement

As the Movie Theater database continues to grow and expand, there will need to be many additions and adjustments. There will for sure need to be more tables, fields, and keys implemented into the database. One idea that comes to mind is a table displaying data regarding the theaters layout, for example number of seats, type of seats, and more design features. For improvements for the Movie Theater database, it seems that it would be a good idea to provide more specific details regarding the movies and theaters. For example, for the movie table, there

could be additional columns which contain new attributes such as the main actors/actresses, the origin of the film, the director and producer, the writer, and much more. Also, there could be many new tables added as well, for many additional reasons. Specifically, new tables could be added that display information regarding customer demographics, psychographics, and more.

This new table idea could possibly be a great way for the movie producers and theaters to gain new information about their audience. In conclusion, the possible additions to the Movie Theater database are endless, due to the fact that there's simply so much information out in the world.

This assignment has been a great way for me to learn how to construct another database, as well as how the database systems work together.

References

Silberschatz, A., Galvin, P. B., & Gagne, G. (2018). Operating system concepts. Hoboken, N.J: Wiley.