

# CSE4/560 Project Milestone 1

**"I have read and understood the course academic integrity policy in the syllabus of the class."**

## 1. Project Details

**Project Name:** MovieGoods

**Project Team Name:** EliteWorks

**Project Team Details:**

NAME	UBID
Harsha Vardhan Sivadanam	hsivadan
Nikhil Kumar Vadigala	nvadigal
Deepana Nagireddy Gari	deepanan

## 2. Problem Statement

Movie enthusiasts often struggle to find reliable and up-to-date information about movies, such as cast and crew details, release dates, and other details. The aim of this project is to develop a comprehensive and accurate movie database that stores information about movies and their associated details. The database will include data on movie titles, cast and crew members, release dates, genres, ratings, and other relevant information. The project will involve collecting data from multiple sources and using data cleaning and data integration techniques to ensure that the database is accurate and consistent. The database will also need to be scalable to accommodate new movie releases and updates to existing movie information. The project will also involve developing a user-friendly interface for accessing the database and querying for movie information. The objective of this project is to provide movie enthusiasts with a reliable and comprehensive database that can be used to access information quickly and easily about their favorite movies.

### Why we need a database instead of an excel file?

Databases are often preferred over Excel files for storing and managing data due to several advantages. First, databases are more scalable and performant than Excel files, which can become slow and unwieldy as data grows. Additionally, databases are designed to maintain data integrity and accuracy, minimizing the risk of errors and inconsistencies. Security is another advantage of databases, with robust authentication and permission features to protect sensitive data.

Whereas in our project, why we used database instead excel file because storing and maintaining a large amount of movie data, including directors, actors, and other details, can become complex and impractical using Excel sheets. To avoid duplication and errors, a database is needed to keep the data sorted, establish relationships between entities, and create a reliable source of information. This will also provide a long-term solution and a single source of truth for different movie database systems according to user needs.

### **3.Target user**

#### **User of the database:**

The target users of the MovieGoods database could be movie enthusiasts, filmmakers, movie critics, researchers, and more importantly people who want to explore different movies. This database is useful for every age group. Mainly the target end users would be the ones between 18-35 age. It can be used by anyone who loves entertainment.

#### **Administrator of the database:**

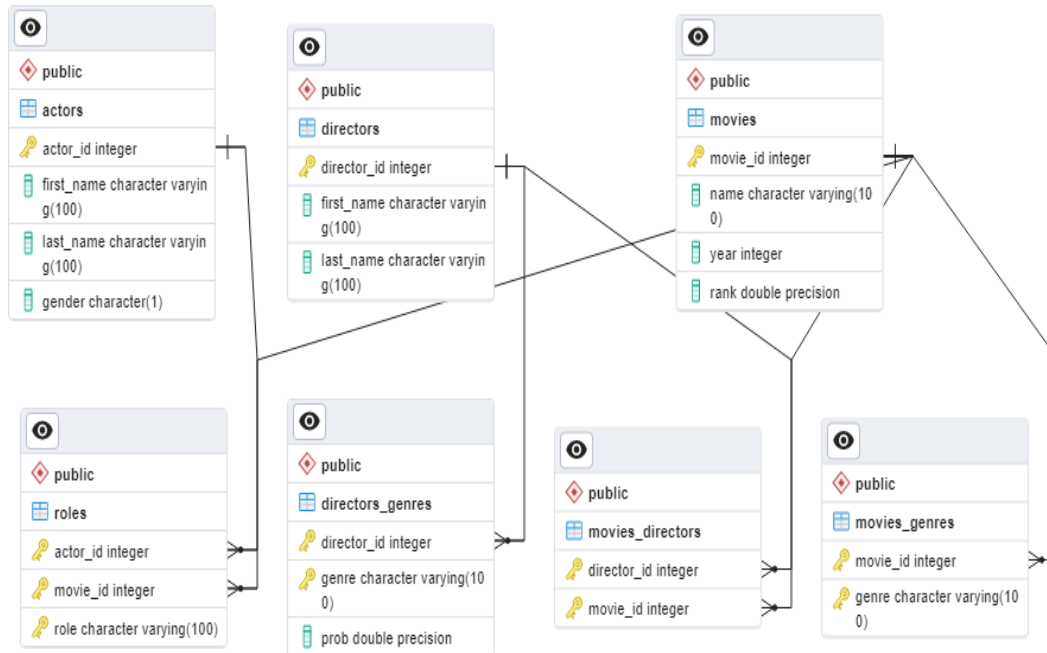
A team consisting of database administrators, developers, and system analysts are responsible for maintaining, updating, and securing the movie information system database.

#### **Real life-life scenario:**

A real-life scenario for the movie information system could be a popular movie streaming service such as Netflix or Amazon Prime. These services could use the database to recommend movies to their users based on their viewing history and preferences. The database could also be used by movie review websites to provide comprehensive information about a particular movie, including ratings and reviews from various sources, and relevant information about the movie's cast and crew. The database could also be used by cinema halls to promote and screen movies that are popular among their audience.

## 4. E/R diagram

Entity relationship diagram is basically a visual representation of entities. It depicts the logical structure of a database by showing the relationships between tables, columns and keys.



## 5. Relations and Data

```

create TABLE actors (
    actor_id INT NOT NULL DEFAULT '0',
    first_name VARCHAR(100) NULL DEFAULT NULL,
    last_name VARCHAR(100) NULL DEFAULT NULL,
    gender CHAR(1) NULL DEFAULT NULL,
    PRIMARY KEY (actor_id)
);
  
```

```

CREATE TABLE directors (
    director_id INT NOT NULL DEFAULT '0',
    first_name VARCHAR(100) NULL DEFAULT NULL,
    last_name VARCHAR(100) NULL DEFAULT NULL,
    PRIMARY KEY (director_id)
);
  
```

```

CREATE TABLE movies (
    movie_id INT NOT NULL DEFAULT '0',
    name VARCHAR(100) NULL DEFAULT NULL,
    year INT NULL DEFAULT NULL,
    rank FLOAT NULL DEFAULT NULL,
    PRIMARY KEY (movie_id)
);
  
```

```

CREATE TABLE directors_genres (
    director_id INT NOT NULL,
    genre VARCHAR(100) NOT NULL,
    prob FLOAT NULL DEFAULT NULL,
    PRIMARY KEY (director_id, genre),
    FOREIGN KEY (director_id) REFERENCES directors(director_id)
);
  
```

```

CREATE TABLE movies_directors (
    director_id INT NOT NULL,
    movie_id INT NOT NULL,
    PRIMARY KEY (director_id, movie_id),
    FOREIGN KEY (director_id) REFERENCES directors(director_id),
    FOREIGN KEY (movie_id) REFERENCES movies(movie_id)
);
  
```

```

CREATE TABLE movies_genres (
    movie_id INT NOT NULL,
    genre VARCHAR(100) NOT NULL,
    PRIMARY KEY (movie_id, genre),
    FOREIGN KEY (movie_id) REFERENCES movies(movie_id)
);
  
```

```

CREATE TABLE roles (
  actor_id INT NOT NULL,
  movie_id INT NOT NULL,
  role VARCHAR(100) NOT NULL ,
  PRIMARY KEY (actor_id, movie_id, role) ,
  FOREIGN KEY (actor_id) REFERENCES actors(actor_id),
  FOREIGN KEY (movie_id) REFERENCES movies(movie_id)
);

```

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Query Query History

9 select \* from directors\_genres

10

Data Output Messages Notifications

	director_id [PK] integer	genre [PK] character varying (100)	prob double precision
1	2	Short	1
2	3	Drama	1
3	5	Documentary	1
4	6	Drama	1
5	6	Short	1
6	8	Action	0.666667
7	8	Adventure	0.037037
8	8	Comedy	0.185185
9	8	Crime	0.148148
10	8	Drama	0.592593
11	8	Family	0.407407
12	8	Romance	0.222222
13	8	Thriller	0.111111
14	10	Comedy	1
15	10	Short	1
16	11	Drama	1

Query Query History

13 select \* from movies\_directors

14

Data Output Messages Notifications

	director_id [PK] integer	movie_id [PK] integer
1	8	4860
2	17	4719
3	23	1807
4	28	5334
5	59	4154
6	59	4431
7	62	5253
8	72	7132
9	87	8276
10	89	9764
11	90	6228
12	93	4901
13	93	7268
14	93	7713
15	93	8596
16	93	8924

Query Query History

17 select \* from roles

18

Data Output Messages Notifications

	actor_id [PK] integer	movie_id [PK] integer	role [PK] character varying (100)
1	28	846	Themselves
2	28	1465	Themselves
3	28	1681	Themselves
4	28	1975	Themselves
5	28	2009	Themselves - Performers
6	35	2252	(segment 'Id')
7	38	1487	Himself
8	38	2258	Himself
9	38	2331	Himself
10	38	2581	Performer and winner of 'Hey
11	38	2626	Himself
12	43	1737	Himself - Performer
13	43	1743	Himself
14	43	2394	Himself
15	43	2581	Himself
16	47	1975	Themselves

A relationship between two database tables presupposes that one of them has a foreign key that references the primary key of another table.

- To form a relationship between movies\_genre and movies, we have movie\_id, which forms a link between.
- In director\_genres table, we have director\_id, which create the relationship between it and directors table.
- Coming to movies\_directors, it can be linket to two tables, which are director\_id from directors table & movie\_id from movies table.
- Roles table can have two relations, one can be with movies table which has movie\_id, and, secondly with actors which has actor\_id.

## 6. Constraints

### Primary Keys:

actors table: actor\_id

directors table: director\_id

movies table: movie\_id

directors\_genres: genre

movies\_genres: genre

roles: role

### Foreign Keys:

directors\_genres: director\_id

movies\_directors: director\_id, movie\_id

movies\_genres: movie\_id

roles: actor\_id, movie\_id

## 7. Attributes

- It gives the information about the name of the movie, year in which it was released, and the rank it holds.

The screenshot shows the 'movies' table configuration interface. The 'Columns' tab is selected, displaying a table with the following columns: Name, Data type, Length/Precision, Scale, Not NULL?, Primary key?, and Default. The rows are: movie\_id (integer, Not NULL, Primary key, Default 0), name (character varying, length 100, Not NULL, Primary key, Default NULL::char), year (integer, Not NULL, Primary key, Default), and rank (double precision, Not NULL, Primary key, Default).

Name	Data type	Length/Precision	Scale	Not NULL?	Primary key?	Default
movie_id	integer			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
name	character varying	100		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NULL::char
year	integer			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
rank	double precision			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

- It gives the information about the full name of the director who made the film you are looking for.

The screenshot shows the 'directors' table configuration interface. The 'Columns' tab is selected, displaying a table with the following columns: Name, Data type, Length/Precision, Scale, Not NULL?, Primary key?, and Default. The rows are: director\_id (integer, Not NULL, Primary key, Default 0), first\_name (character varying, length 100, Not NULL, Primary key, Default NULL::char), and last\_name (character varying, length 100, Not NULL, Primary key, Default NULL::char).

Name	Data type	Length/Precision	Scale	Not NULL?	Primary key?	Default
director_id	integer			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
first_name	character varying	100		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NULL::char
last_name	character varying	100		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NULL::char

- It gives the information about actors who acted in the movie.

actors

General Columns Advanced Constraints Parameters Security SQL

Inherited from table(s) Select to inherit from...

Columns

Name	Data type	Length/Precision	Scale	Not NULL?	Primary key?	Default
actor_id	integer			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
first_name	character varying	100		<input type="checkbox"/>	<input type="checkbox"/>	NULL::char
last_name	character varying	100		<input type="checkbox"/>	<input type="checkbox"/>	NULL::char
gender	character	1		<input type="checkbox"/>	<input type="checkbox"/>	NULL::bpch

Close Reset Save

- It talks about which person is playing what role as in cast of movie.

roles

General Columns Advanced Constraints Parameters Security SQL

Inherited from table(s) Select to inherit from...

Columns

Name	Data type	Length/Precision	Scale	Not NULL?	Primary key?	Default
actor_id	integer			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
movie_id	integer			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
role	character varying	100		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Close Reset Save

- It gives information about what genre is the movie you are looking for.

movies\_genres

General Columns Advanced Constraints Parameters Security SQL

Inherited from table(s) Select to inherit from...

Columns

Name	Data type	Length/Precision	Scale	Not NULL?	Primary key?	Default
movie_id	integer			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
genre	character varying	100		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Close Reset Save

- It gives details about the movie and director.

**movies\_directors**

General Columns Advanced Constraints Parameters Security SQL

Inherited from table(s) Select to inherit from...

Name	Data type	Length/Precision	Scale	Not NULL?	Primary key?	Default
director_id	integer			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
movie_id	integer			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Close Reset Save

- It gives the information about genre and rating of the director's movies.

**directors\_genres**

General Columns Advanced Constraints Parameters Security SQL

Inherited from table(s) Select to inherit from...

Name	Data type	Length/Precision	Scale	Not NULL?	Primary key?	Default
director_id	integer			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
genre	character varying	100		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
prob	double precision			<input type="checkbox"/>	<input type="checkbox"/>	

Close Reset Save

## 8. Queries

### Select & Insert:

Query Query History

```

1 select * from actors where actor_id=10283;
2
3 insert into actors values (10283,'Justin','Ament','F');
4
5 select * from actors where actor_id=10283;
6
7 update actors
8 set gender='M'
9 where actor_id=10283;
10
11 select * from actors where actor_id=10283;

```

Data Output Messages Notifications

actor_id	first_name	last_name	gender
[PK] integer	character varying (100)	character varying (100)	character (1)

Total rows: 0 of 0 Query complete 00:00:00.068



Query Query History

```

1 select * from actors where actor_id=10283;
2
3 insert into actors values (10283,'Justin','Ament','F');
4
5 select * from actors where actor_id=10283;
6
7 update actors
8 set gender='M'
9 where actor_id=10283
10
11 select * from actors where actor_id=10283;

```

Data Output Messages Notifications

INSERT 0 1

Query returned successfully in 66 msec.

Total rows: 0 of 0 Query complete 00:00:00.066

Query Query History

```

1 select * from actors where actor_id=10283;
2
3 insert into actors values (10283,'Justin','Ament','F');
4
5 select * from actors where actor_id=10283;
6
7 update actors
8 set gender='M'
9 where actor_id=10283
10
11 select * from actors where actor_id=10283;

```

Data Output Messages Notifications

actor_id [PK] integer	first_name character varying (100)	last_name character varying (100)	gender character (1)
1	10283 Justin	Ament	F

Total rows: 1 of 1 Query complete 00:00:00.075

## Update:

Query Query History

```

1 select * from actors where actor_id=10283;
2
3 insert into actors values (10283,'Justin','Ament','F');
4
5 select * from actors where actor_id=10283;
6
7 update actors
8 set gender='M'
9 where actor_id=10283
10
11 select * from actors where actor_id=10283;

```

Data Output Messages Notifications

UPDATE 1

Query returned successfully in 51 msec.

Total rows: 1 of 1 Query complete 00:00:00.051

Query Query History

```

1 select * from actors where actor_id=10283;
2
3 insert into actors values (10283,'Justin','Ament','F');
4
5 select * from actors where actor_id=10283;
6
7 update actors
8 set gender='M'
9 where actor_id=10283
10
11 select * from actors where actor_id=10283;

```

Data Output Messages Notifications

actor_id [PK] integer	first_name character varying (100)	last_name character varying (100)	gender character (1)
1	10283 Justin	Ament	M

Total rows: 1 of 1 Query complete 00:00:00.078

## Delete:

Query Query History

```

2
3 insert into actors values (10283,'Justin','Ament','F');
4
5 select * from actors where actor_id=10283;
6
7 update actors
8 set gender='M'
9 where actor_id=10283
10
11 select * from actors where actor_id=10283;
12
13 insert into director values()
14
15 delete from actors where actor_id=10283
16

```

Data Output Messages Notifications

DELETE 1

Query returned successfully in 59 msec.

Total rows: 1 of 1 Query complete 00:00:00.059

Query Query History

```

3 insert into actors values (10283,'Justin','Ament','F');
4
5 select * from actors where actor_id=10283;
6
7 update actors
8 set gender='M'
9 where actor_id=10283
10
11 select * from actors where actor_id=10283;
12
13 insert into director values()
14
15 delete from actors where actor_id=10283
16
17 select * from actors where actor_id=10283;

```

Data Output Messages Notifications

actor_id [PK] integer	first_name character varying (100)	last_name character varying (100)	gender character (1)
--------------------------	---------------------------------------	--------------------------------------	-------------------------

Total rows: 0 of 0 Query complete 00:00:00.055

## Alter:

Query Query History

```
8 set gender='M'
9 where actor_id=10283
10
11 select * from actors where actor_id=10283;
12
13 insert into director values()
14
15 delete from actors where actor_id=10283
16
17 select * from actors where actor_id=10283;
18
19 alter table actors Rename column gender to sex
20
21
22
```

Data Output Messages Notifications

ALTER TABLE

Query returned successfully in 79 msec.

Total rows: 0 of 0 Query complete 00:00:00.079

Query Query History

```
8 set gender='M'
9 where actor_id=10283
10
11 select * from actors where actor_id=10283;
12
13 insert into director values()
14
15 delete from actors where actor_id=10283
16
17 select * from actors where actor_id=10283;
18
19 alter table actors Rename column gender to sex
20
21 select * from actors where actor_id=10283;
22
```

Data Output Messages Notifications

actor_id	first_name	last_name	sex
[PK] integer	character varying (100)	character varying (100)	character (1)

Total rows: 0 of 0 Query complete 00:00:00.059

## Data Load:

Query Query History

```
1 COPY actors
2 FROM 'C:\actors.csv'
3 DELIMITER ','
4 CSV Header;
5
6 COPY directors
7 FROM 'C:\directors.csv'
8 DELIMITER ','
9 CSV Header;
10
11 COPY directors_genres
12 FROM 'C:\directors_genres.csv'
13 DELIMITER ','
14 CSV Header;
15
16 COPY movies
17 FROM 'C:\movies.csv'
18 DELIMITER ','
19 CSV Header;
20
21
22
```

```
21 COPY movies_directors
22 FROM 'C:\movies_directors.csv'
23 DELIMITER ','
24 CSV Header;
25
26 COPY movies_genres
27 FROM 'C:\movies_genres.csv'
28 DELIMITER ','
29 CSV Header;
30
31 COPY roles
32 FROM 'C:\roles.csv'
33 DELIMITER ','
34 CSV Header;
35
36
```

```
36
37
38 select count(*) from actors;
39
40
```

Data Output Messages Notifications

count
bigint
10000

Total rows: 1 of 1 Query complete 00:00:00.065