

PROJECT OUTLINE

A) Overview

Gorak is an entrepreneurial Gorkian, an interstellar species faring from Gorkia Prime. In Gorkia, human movies from Earth have recently grown in popularity among Gorkian high society. With figures like Gelon Gusk collecting primitive blu-rays containing human cinema, Gorak has made a company to profit from the trend.

As part of the Gorkian policy of xeno-preservation, Gorkians are strictly prohibited when it comes to directly contacting humans in their original form. Therefore, specially trained Gorkian agents have infiltrated human society disguised in human form. The only direct contact permitted between Gorkians and humans is to be done in disguise until the Gorkian congress passes first contact protocols. However, the Gorkian senate is in political deadlock, and Gorak expects that passing the protocols will take a long time.

Thus, Gorak made the following business model:

Gorak's store wants to build a galaxy-website where a potential customer can look up the title, price, stock, and actors in a given human movie (the database currently has around 200 most popular movies, but is growing every week). If the customer wants to buy one or more blu-ray discs of one or more movies, she can order the products online by inputting her galactic-credit card number, products, and quantities. Once the order is received, one Gorkian infiltrator agent employee is assigned to that order. The order is then fulfilled by this agent and is shipped back to the address of a customer in Gorkia. Because of the expenses involved in transporting the original blu-ray back to Gorkia Prime, Gorak estimates that his customer base will number in the 10,000s.

<Problem to solve and numerical facts, entities noted in parentheses>

Gorak's first step is to design a database that can support his website and operations. Gorak envisions facilitating order (Orders and Order_items) fulfillment by using his database to let customers (Customers) pick an available movie (Movies) and look at the general information of the movie (Actors, Performances, Movies) from his site, submit an order, and assign that order to an employee (Employees, who is a Gorkian infiltrator). The database also has to support the growth of Gorak's business. Gorak expects that the website will support up to 10,000 movies and 100,000 customers by the end of the year.

B) Database Outline:

Customers:

Description: a customer who put in an order to Gorak's business. The customer is located in Gorkia prime and is using Gorak's galactic-website to put in orders for Gorak's business to fulfill.

- Attributes:
 - id : int, auto_increment, not NULL, PK;
 - first : VARCHAR(50), not NULL;
 - last : VARCHAR(50), not NULL;
 - street : VARCHAR(50), not NULL;
 - city : VARCHAR(50), not NULL;
 - state : VARCHAR(50), not NULL;
 - phone : VARCHAR(15), not NULL;
- Relationships:
 - M : 1 relationship between Customer and Order (FK customer_id in Order)

Employees:

Description: an Gorkian infiltrator hired by Gorak to procure ordered blu-ray discs. One employee is assigned to one order from one customer and is in charge of filling out that order.

- Attributes:
 - id : int, auto_increment, not NULL, PK;
 - first : VARCHAR(50), not NULL;
 - last : VARCHAR(50), not NULL;
 - street : VARCHAR(50), not NULL;
 - city : VARCHAR(50), not NULL;
 - state : VARCHAR(50), not NULL;
 - phone : VARCHAR(50), not NULL;
- Relationships:
 - M : 1 relationship between Employee and Order (FK employee_id in Order)

Orders:

Description: an order that the customer has filled out. The junction table Order_items indicate what and how many items an order contains. Employee is nullable indicating that no employee has been assigned yet.

- Attributes:
 - order_id : int, auto_increment, not NULL, PK;
 - customer_id : int, not NULL, FK
 - employee_id : int, FK
 - order_date : DATETIME, not NULL;
 - credit_card_num : VARCHAR(16), not NULL;
 - order_fulfilled : BIT, not NULL; – this is a BOOL value
- Relationships:
 - 1 : M relationship between Order and Customer (FK customer_id in Order)
 - 1 : M relationship between Order and Employee (FK employee_id in Order)
 - M : 1 relationship between Order and Order_item (FK order_id in Order_item)

Order_items:

Description: linked to an order, an order item contains one movie and the quantity of that movie that has been ordered. It is linked to an order_id, allowing customers to buy multiple movies and multiple copies of the same movie. **Junction table between Movies and Orders.**

- Attributes:
 - order_id : int, auto_increment, not NULL, PK, FK;
 - Composite key
 - movie_id : int, auto_increment, not NULL, PK, FK;
 - Composite key
 - quantity : int;
- Relationships:
 - 1 : M relationship between Order_item and Order (FK order_id in Order_item)
 - 1 : M relationship between Order_item and Movie (FK movie_id in Order_item)
- Deletion of order_id and movie_id cascades to delete Order_items entry

Movies:

Description: a human movie that Gorak's business offers on the galactic-website for his store. Xeno-preservists in the Gorkian congress love the Avatar series.

- Attributes:
 - movie_id : int, auto_increment, not NULL, PK;
 - title : VARCHAR(100), not NULL;
 - stock : int, not NULL;

- price : DECIMAL(16, 2), not NULL;
- Possible additional attributes:
 - main_genre: VARCHAR(32)
 - ratings: int;
- Relationships:
 - M : 1 relationship between Movie and Order_item (FK movie_id in Order_item)
 - M : 1 relationship between Movie and Performance (FK movie_id in Performance)

Performances:

Description: a junction table indicating a performance of an actor in a movie. The entity is there to get rid of the M:M relationship between Movies and Actors. **Junction table between Movies and Actors.**

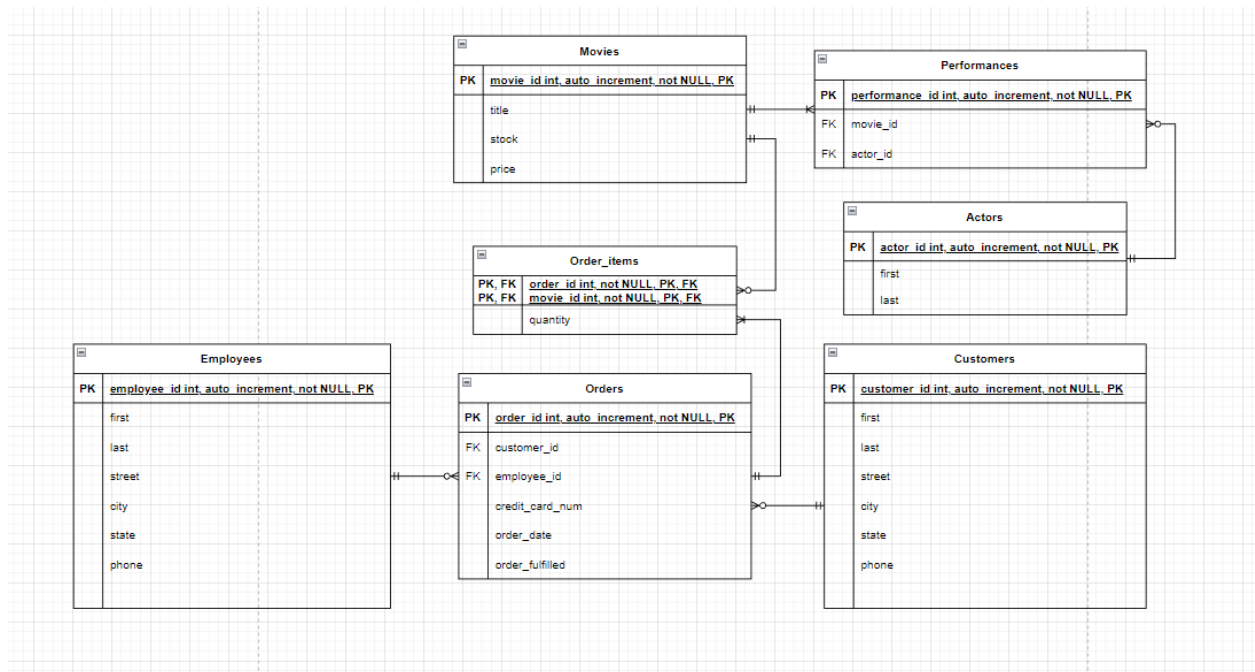
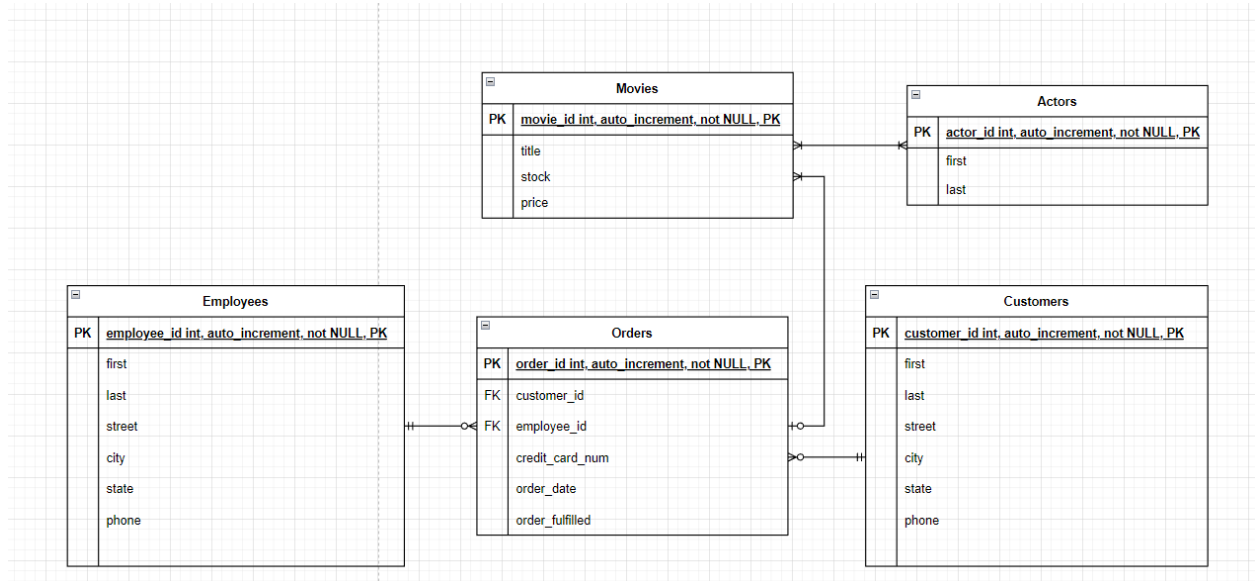
- Attributes:
 - performance_id : int, auto_increment, not NULL, PK;
 - movie_id : int, not NULL, FK
 - actor_id : int, not NULL, FK
- Relationships:
 - 1 : M relationship between Performance and Movie (FK movie_id in Performance)
 - 1 : M relationship between Performance and Actor (FK actor_id in Performance)
- Deletion of movie_id and actor_id cascades to delete Performances entry

Actors:

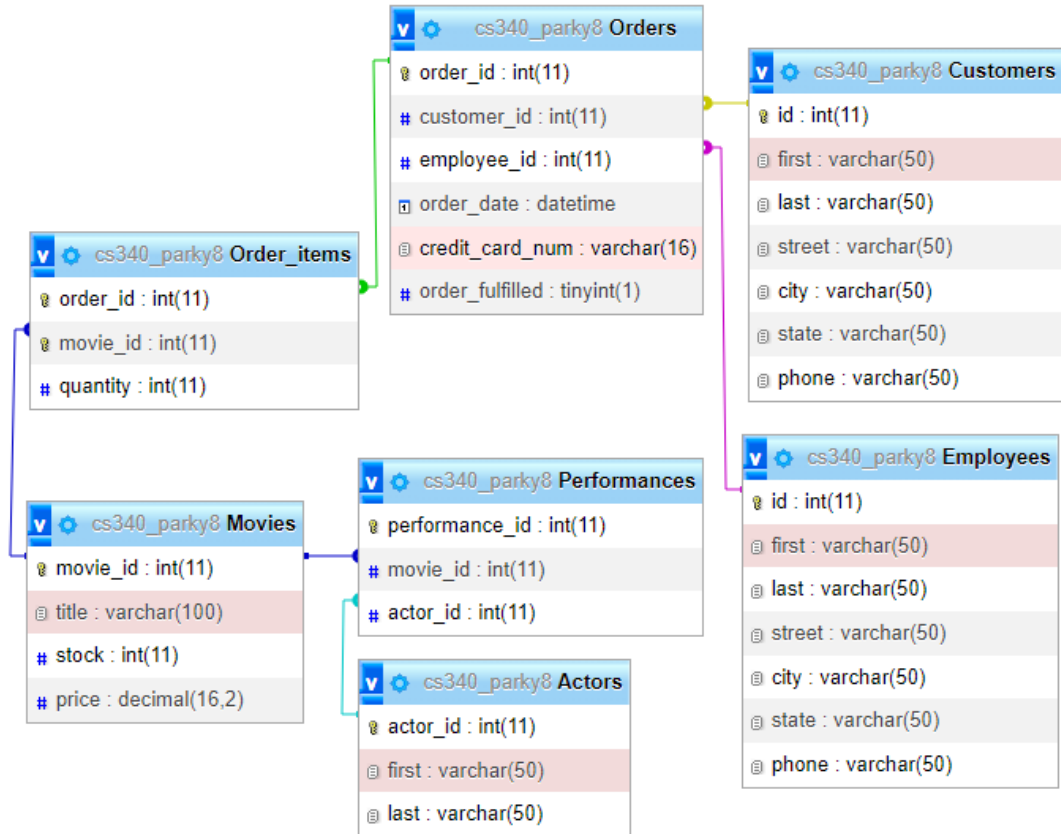
Description: an Earthier actor who performs in a movie. There are rumors that a famous Hollywood actor is a Gorkian agent.

- Attributes:
 - actor_id : int, auto_increment, not NULL, PK;
 - first : VARCHAR(50), not NULL;
 - last : VARCHAR(50), not NULL;
- Relationships:
 - M : 1 relationship between Actor and Performance (FK actor_id in Performance)

C) Entity-Relationship Diagram, Resolution of M to N Relationship:



D) Schema:



E) Sample Data:

```
MariaDB [cs340_parky8]> select * from Customers;
+-----+-----+-----+-----+-----+-----+-----+
| id | first | last  | street          | city          | state | phone      |
+-----+-----+-----+-----+-----+-----+-----+
| 1  | YJ    | Park  | 2415 Chestnut St | Philadelphia  | PA    | 1234567890 |
| 2  | San   | Davran | 1231 Maple St   | New York City | NY    | 0987654321 |
| 3  | Tupac | Shakur | 9807 Oak St     | Los Angeles  | CA    | 3216540987 |
+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.000 sec)
```

Customers						
id	first	last	street	city	state	phone
1	YJ	Park	2415 Chestnut St	Philadelphia	PA	1234567890
2	San	Davran	1231 Maple St	New York City	NY	0987654321
3	Tupac	Shakur	9807 Oak St	Los Angeles	CA	3216540987

```
MariaDB [cs340_parky8]> select * from Employees;
+-----+-----+-----+-----+-----+-----+-----+
| id | first | last  | street          | city          | state | phone      |
+-----+-----+-----+-----+-----+-----+-----+
| 1  | Erling | Haaland | 3211 Oakview St. | Manchester    | MA    | 1111111111 |
| 2  | Harry  | Kane   | 3453 Carnaby St  | London        | TN    | 2222222222 |
| 3  | Darwin | Nunez  | 1315 Bristol St  | Liverpool     | UK    | 3333333333 |
+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.000 sec)
```

Employees						
id	first	last	street	city	state	phone
1	Erling	Haaland	3211 Oakview St	Manchester	MA	1111111111
2	Harry	Kane	3453 Carnaby St	London	TN	2222222222
3	Darwin	Nunez	9807 Oak St	Los Angeles	CA	3333333333

```

MariaDB [cs340_parky8]> select * from Orders;
+-----+-----+-----+-----+-----+-----+
| order_id | customer_id | employee_id | order_date | credit_card_num | order_fulfilled |
+-----+-----+-----+-----+-----+-----+
| 1 | 1 | 2 | 2022-01-11 00:00:00 | 1111222233334444 | 0 |
| 2 | 1 | 1 | 2022-01-12 00:00:00 | 2222333344445555 | 1 |
| 3 | 2 | 2 | 2022-01-01 00:00:00 | 3333444455556666 | 1 |
| 4 | 3 | 3 | 2022-01-04 00:00:00 | 4444555566667777 | 0 |
| 5 | 2 | 2 | 2022-01-04 00:00:00 | 5555666677778888 | 0 |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.001 sec)

```

Orders					
order_id	customer_id	employee_id	order_date	credit_card_num	order_fulfilled
1	1	2	2022-01-11	1111222233334444	0
2	1	1	2022-01-12	2222333344445555	1
3	2	2	2022-01-01	3333444455556666	1
4	3	3	2022-01-04	4444555566667777	0
5	2	2	2022-01-04	5555666677778888	0

```

MariaDB [cs340_parky8]> select * from Order_items;
+-----+-----+-----+
| order_id | movie_id | quantity |
+-----+-----+-----+
| 1 | 2 | 2 |
| 1 | 3 | 4 |
| 2 | 1 | 8 |
| 3 | 2 | 5 |
| 4 | 1 | 1 |
| 5 | 2 | 3 |
+-----+-----+-----+
6 rows in set (0.000 sec)

```

Order_items		
order_id	movie_id	quantity
1	3	4
1	2	2
2	1	8

3	2	5
4	1	1
5	2	3

```
MariaDB [cs340_park8]> select * from Movies;
+-----+-----+-----+-----+
| movie_id | title           | stock | price |
+-----+-----+-----+-----+
| 1 | Aliens          | 3     | 12.99 |
| 2 | The Purge       | 13    | 2.99  |
| 3 | The Black Phone | 21    | 5.99  |
+-----+-----+-----+-----+
3 rows in set (0.000 sec)
```

Movies			
movie_id	title	stock	price
1	Aliens	3	12.99
2	The Purge	13	2.99
3	The Black Phone	21	5.99

```
MariaDB [cs340_park8]> select * from Performances;
+-----+-----+-----+
| performance_id | movie_id | actor_id |
+-----+-----+-----+
| 1 | 2 | 1 |
| 2 | 2 | 2 |
| 3 | 2 | 3 |
| 4 | 2 | 4 |
| 5 | 1 | 5 |
| 6 | 1 | 6 |
| 7 | 1 | 7 |
| 8 | 1 | 8 |
| 9 | 3 | 9 |
| 10 | 3 | 10 |
| 11 | 3 | 11 |
+-----+-----+-----+
11 rows in set (0.000 sec)
```

Performances		
performance_id	movie_id	actor_id
1	2	1

2	2	2
3	2	3
4	2	4
5	1	5
6	1	6
7	1	7
8	1	8
9	3	9
10	3	10
11	3	11
12	3	1

```

Database changed
MariaDB [cs340_parky8]> select * from Actors;
+-----+-----+-----+
| actor_id | first      | last      |
+-----+-----+-----+
| 1        | Ethan      | Hawke     |
| 2        | Lena       | Headey    |
| 3        | Max        | Burkholder|
| 4        | Adelaide   | Kane      |
| 5        | Sigourney  | Weaver    |
| 6        | Michael    | Biehn     |
| 7        | Carrie     | Henn      |
| 8        | Paul       | Reiser    |
| 9        | Mason      | Thames    |
| 10       | Jeremy     | Davies    |
| 11       | Rebecca    | Clarke    |
+-----+-----+-----+
11 rows in set (0.001 sec)

```


Actors		
actor_id	first	last
1	Ethan	Hawke
2	Lena	Headey
3	Max	Burkholder
4	Adelaide	Kane

5	Sigourney	Weaver
6	Michael	Biehn
7	Carrie	Henn
8	Paul	Reiser
9	Mason	Thames
10	Jeremy	Davies
11	Rebecca	Clarke

SCREEN SHOTS

Home Page UI

[Home](#) [Employees](#) [Customers](#) [Movies](#) [Actors](#) [Order Items](#) [Orders](#) [Performances](#) [Search Employees](#)



Gorak's Movie Delivery database management

Note to reviewers: All CRUD functionalities for all entities except Performances implemented.

Reset DB

Create, Read, Delete

[Home](#) [Employees](#) [Customers](#) [Movies](#) [Actors](#) [Order Items](#) [Orders](#) [Performances](#) [Search Employees](#)

Employees

		id	first	last	street	city	state	phone
Edit	Delete	1	Erling	Haaland	3211 Oakview St.	Manchester	MA	1111111111
Edit	Delete	2	Harry	Kane	3453 Carnaby St	London	TN	2222222222
Edit	Delete	3	Darwin	Nunez	1315 Bristol St	Liverpool	UK	3333333333

Add Employee

First Name

Enter first name

Last Name

Enter last name

Street Name

Enter street

City Name

Enter city

State Name

Enter state

Phone Number

Enter phone

Submit

Update

Home Employees Customers Movies Actors Order Items Orders Performances Search Employees

Edit Employee

id	first	last	street	city	state	phone
1	Erling	Haaland	3211 Oakview St.	Manchester	MA	1111111111

First Name

Enter first name

Last Name

Enter last name

Street Name

Enter street

City Name

Enter city

State Name

Enter state

Phone Number

Enter phone

Submit

Cancel

Search

Home Employees Customers Movies Actors Order Items Orders Performances Search Employees

Employees

		id	first	last	street	city	state	phone
Edit	Delete	1	Erling	Haaland	3211 Oakview St.	Manchester	MA	1111111111
Edit	Delete	2	Harry	Kane	3453 Carnaby St	London	TN	2222222222
Edit	Delete	3	Darwin	Nunez	1315 Bristol St	Liverpool	UK	3333333333

Search Name

Search Name

Enter name to search

Submit