Movie Rental Business

Data Set:

Data set consists of 19 tables associated with a movie rental business.

Situation 1:

The 'Maven Movies' company's insurance policy is up for renewal and the insurance company's underwriters need some updated information before they will issue a new policy.

Objectives:

Use MySQL to extract and analyze data from various tables in the 'Maven Movies' database to answer the underwriters' questions.

Underwriter's Questions:

1) We will need a list of all staff members, including their first and last names, email addresses, and the store identification number where they work.

2) We will need separate counts of inventory items held at each of your two stores.

3) We will need a count of active customers for each of your stores. Separately, please.

4) In order to assess the liability of a data breach, we will need you to provide a count of all customer email addresses stored in the database.

5) We are interested in how diverse your film offering is as a means of understanding how likely you are to keep customers engaged in the future. Please provide a count of unique film titles you have in inventory at each store and then provide a count of the unique categories of films you provide.

6) We would like to understand the replacement cost of your films. Please provide the replacement cost for the film that is least expensive to replace, the most expensive to replace, and the average of all films you carry.

7) We are interested in having you put payment monitoring systems and maximum payment processing restrictions in place in order to minimize the future risk of fraud by your staff. Please provide the average payment you process, as well as the maximum payment you have processed.

8) We would like to better understand what your customer base looks like. Please provide a list of all customer identification values, with a count of rentals they have made all-time, with your highest volume customers at the top of the list.

Situation 2:

'Maven Movies' is approached by another local business owner who is interested in purchasing the company. He primarily owns restaurants and bars, so he has lots of questions about the business and the rental business in general.

Objectives:

Leverage SQL skills to extract and analyze data from various tables in the Maven Movies database to answer the potential Acquirer’s questions.

Acquirer's Questions:

1) My partner and I want to come by each of the stores in person and meet the managers. Please send over the managers' names at each store, with the full address of each property (street address, district, city, and country please).

2) I would like to get a better understanding of all of the inventory that would come along with the business. Please pull together a list of each inventory item you have stocked, including the store_id number, the inventory_id , the name of the film, the film's rating, its rental rate and replacement cost.

3) From the same list of films you just pulled, please roll that data up and provide a summary level overview of your inventory. We would like to know how many inventory items you have with each rating at each store.

4) Similarly, we want to understand how diversified the inventory is in terms of replacement cost. We want to see how big of a hit it would be if a certain category of film became unpopular at a certain store. We would like to see the number of films, as well as the average replacement cost, and total replacement cost, sliced by store and film category.

5) We want to make sure you folks have a good handle on who your customers are. Please provide a list of all customer names, which store they go to, whether or not they are currently active, and their full addresses with street address, city, and country.

6) We would like to understand how much your customers are spending with you, and also to know who your most valuable customers are. Please pull together a list of customer names, their total lifetime rentals, and the sum of all payments you have collected from them. It would be great to see this ordered on total lifetime value, with the most valuable customers at the top of the list.

7) My partner and I would like to get to know your board of advisors and any current investors. Could you please provide a list of advisor and investor names in one table? Could you please note whether they are an investor or an advisor, and for the investors, it would be good to include which company they work with.

8) We're interested in how well you have covered the most awarded actors. Of all the actors with three types of awards, for what % of them do we carry a film? And how about for actors with two types of awards? Same questions. Finally, how about actors with just one award?

Situation 1:

1) We will need a list of all staff members, including their first and last names, email addresses, and the store identification number where they work.

Query:

```
USE mavenmovies;

SELECT

   first_name,

   last_name,
```

```
    email,
    store_id
FROM
    staff;
```

Output:

first_name	last_name	email	store_id
Mike	Hillyer	Mike.Hillyer@sakilastaff.com	1
Jon	Stephens	Jon.Stephens@sakilastaff.com	2

2) We will need separate counts of inventory items held at each of your two stores.

Query:

```
SELECT
    store_id,
    COUNT(inventory_id) AS inventory_items
FROM
    inventory
GROUP BY store_id;
```

Output:

store_id	inventory_items
1	2270
2	2311

3) We will need a count of active customers for each of your stores. Separately, please.

Query:

```
SELECT
    store_id,
    COUNT(customer_id) AS active_customers
FROM
    customer
WHERE
    active = 1
GROUP BY store_id;
```

Output:

store_id	active_customers
1	318
2	266

4) In order to assess the liability of a data breach, we will need you to provide a count of all customer email addresses stored in the database.

Query:

```
SELECT
   COUNT(email) AS number_of_email_addresses
FROM
   customer;
```

Output:

number_of_email_addresses
599

5) We are interested in how diverse your film offering is as a means of understanding how likely you are to keep customers engaged in the future. Please provide a count of unique film titles you have in inventory at each store and then provide a count of the unique categories of films you provide.

Query:

```
SELECT
   store_id,
   COUNT(DISTINCT film_id) AS films
FROM
   inventory
GROUP BY
         store_id;


SELECT
   COUNT(DISTINCT name) AS unique_categories
FROM
   category;
```

Output:

store_id	films
1	759
2	762

unique_categories
16

6) We would like to understand the replacement cost of your films. Please provide the replacement cost for the film that is least expensive to replace, the most expensive to replace, and the average of all films you carry.

Query:

```
SELECT
   MIN(replacement_cost) AS least_expensive_to_replace,
   MAX(replacement_cost) AS most_expensive_to_replace,
   AVG(replacement_cost) AS average_replacement_cost
FROM
   film;
```

Output:

least_expensive_to_replace	most_expensive_to_replace	average_replacement_cost
9.99	29.99	19.984000

7) We are interested in having you put payment monitoring systems and maximum payment processing restrictions in place in order to minimize the future risk of fraud by your staff. Please provide the average payment you process, as well as the maximum payment you have processed.

Query:

```
SELECT
        AVG(amount) AS average_payment,
   MAX(amount) AS max_payment_processed
FROM
   payment;
```

Output:

average_payment	max_payment_processed
4.200667	11.99

8) We would like to better understand what your customer base looks like. Please provide a list of all customer identification values, with a count of rentals they have made all-time, with your highest volume customers at the top of the list.

Query:

```
SELECT
   customer_id, COUNT(inventory_id) AS count_of_rentals
FROM
   rental
GROUP BY customer_id
```

```
ORDER BY count_of_rentals DESC;
```

Output (Only partial output shown):

customer_id	count_of_rentals
148	46
526	45
144	42
236	42
75	41
197	40
469	40
137	39

Situation 2:

1) My partner and I want to come by each of the stores in person and meet the managers. Please send over the managers' names at each store, with the full address of each property (street address, district, city, and country please).

Query:

```
SELECT
    store.store_id,
    staff.first_name,
    staff.last_name,
    address.address AS street_address,
    address.district,
    city.city,
    country.country
FROM
    staff
        INNER JOIN
    store ON staff.staff_id = store.manager_staff_id
        INNER JOIN
    address ON store.address_id = address.address_id
        INNER JOIN
    city ON address.city_id = city.city_id
        INNER JOIN
    country ON city.country_id = country.country_id;
```

Output:

store_id	first_name	last_name	street_address	district	city	country
1	Mike	Hillyer	47 MySakila Drive	Alberta	Lethbridge	Canada
2	Jon	Stephens	28 MySQL Boulevard	QLD	Woodridge	Australia

2) I would like to get a better understanding of all of the inventory that would come along with the business. Please pull together a list of each inventory item you have stocked, including the store_id number, the inventory_id , the name of the film, the film's rating, its rental rate and replacement cost.

Query:

```
SELECT
    inventory.store_id,
    inventory.inventory_id,
    film.title,
    film.rating,
    film.rental_rate,
    film.replacement_cost
FROM
    inventory
        LEFT JOIN
    film ON inventory.film_id = film.film_id;
```

Output (Only partial output shown):

store_id	inventory_id	title	rating	rental_rate	replacement_cost
1	1	ACADEMY DINOSAUR	PG	0.99	20.99
1	2	ACADEMY DINOSAUR	PG	0.99	20.99
1	3	ACADEMY DINOSAUR	PG	0.99	20.99
1	4	ACADEMY DINOSAUR	PG	0.99	20.99
1	16	AFFAIR PREJUDICE	G	2.99	26.99
1	17	AFFAIR PREJUDICE	G	2.99	26.99
1	18	AFFAIR PREJUDICE	G	2.99	26.99
1	19	AFFAIR PREJUDICE	G	2.99	26.99

3) From the same list of films you just pulled, please roll that data up and provide a summary level overview of your inventory. We would like to know how many inventory items you have with each rating at each store.

Query:

```
SELECT
    inventory.store_id,
```

```
    film.rating,
    COUNT(inventory.inventory_id) AS count_of_inventory
FROM
    inventory
        LEFT JOIN
    film ON inventory.film_id = film.film_id
GROUP BY
            film.rating,
    inventory.store_id;
```

Output:

store_id	rating	count_of_inventory
1	PG	444
1	G	394
1	PG-13	525
1	NC-17	465
1	R	442
2	PG	480
2	G	397
2	NC-17	479
2	PG-13	493
2	R	462

4) Similarly, we want to understand how diversified the inventory is in terms of replacement cost. We want to see how big of a hit it would be if a certain category of film became unpopular at a certain store. We would like to see the number of films, as well as the average replacement cost, and total replacement cost, sliced by store and film category.

Query:

```
SELECT
    inventory.store_id,
    category.name,
    COUNT(inventory.film_id) AS count_of_inventory,
    AVG(film.replacement_cost) AS average_replacement_cost,
    SUM(film.replacement_cost) AS total_replacement_cost
FROM
    inventory
        LEFT JOIN
    film ON inventory.film_id = film.film_id
```

```
    LEFT JOIN
  film_category ON film.film_id = film_category.film_id
    LEFT JOIN
  category ON film_category.category_id = category.category_id
GROUP BY inventory.store_id , category.name
ORDER BY total_replacement_cost DESC;
```

Output (Only partial output shown):

store_id	name	count_of_inventory	average_replacement_cost	total_replacement_cost
2	Sports	181	20.697182	3746.19
1	Action	169	21.191183	3581.31
1	Drama	162	21.934444	3553.38
2	Animation	174	19.995747	3479.26
2	Documentary	164	20.544878	3369.36
1	Sports	163	20.578957	3354.37
2	Sci-Fi	163	20.493067	3340.37
1	Animation	161	20.387516	3282.39
1	Sci-Fi	149	21.795369	3247.51
1	Family	157	20.537771	3224.43

5) We want to make sure you folks have a good handle on who your customers are. Please provide a list of all customer names, which store they go to, whether or not they are currently active, and their full addresses with street address, city, and country.

Query:

```
SELECT
  customer.first_name,
  customer.last_name,
  customer.store_id,
  customer.active,
  address.address AS street_address,
  address.district AS district,
  city.city,
  country.country
FROM
  customer
    LEFT JOIN
  address ON customer.address_id = address.address_id
    LEFT JOIN
```

```
    city ON address.city_id = city.city_id
        LEFT JOIN
    country ON city.country_id = country.country_id;
```

Output (Only partial output shown):

first_name	last_name	store_id	active	street_address	district	city	country
MARY	SMITH	1	1	1913 Hanoi Way	Nagasaki	Sasebo	Japan
PATRICIA	JOHNSON	1	1	1121 Loja Avenue	California	San Bernardino	United States
LINDA	WILLIAMS	1	1	692 Joliet Street	Attika	Athenai	Greece
BARBARA	JONES	2	1	1566 Inegl Manor	Mandalay	Myingyan	Myanmar
ELIZABETH	BROWN	1	1	53 Idfu Parkway	Nantou	Nantou	Taiwan
JENNIFER	DAVIS	2	1	1795 Santiago de Compostela Way	Texas	Laredo	United States
MARIA	MILLER	1	1	900 Santiago de Compostela Parkway	Central Serbia	Kragujevac	Yugoslavia
SUSAN	WILSON	2	1	478 Joliet Way	Hamilton	Hamilton	New Zealand
MARGARET	MOORE	2	1	613 Korolev Drive	Masqat	Masqat	Oman
DOROTHY	TAYLOR	1	1	1531 Sal Drive	Esfahan	Esfahan	Iran

6) We would like to understand how much your customers are spending with you, and also to know who your most valuable customers are. Please pull together a list of customer names, their total lifetime rentals, and the sum of all payments you have collected from them. It would be great to see this ordered on total lifetime value, with the most valuable customers at the top of the list.

Query:

```
SELECT
    customer.first_name,
    customer.last_name,
    COUNT(payment.rental_id) AS total_lifetime_rentals,
    SUM(payment.amount) AS total_payment
FROM
    customer
        LEFT JOIN
    payment ON customer.customer_id = payment.customer_id
GROUP BY customer.customer_id , customer.first_name , customer.last_name
ORDER BY total_payment DESC;
```

Output (Only partial output shown):

first_name	last_name	total_lifetime_rentals	total_payment
KARL	SEAL	45	221.55
ELEANOR	HUNT	46	216.54
CLARA	SHAW	42	195.58
RHONDA	KENNEDY	39	194.61
MARION	SNYDER	39	194.61
TOMMY	COLLAZO	38	186.62
WESLEY	BULL	40	177.60
TIM	CARY	39	175.61
MARCIA	DEAN	42	175.58
ANA	BRADLEY	34	174.66

7) My partner and I would like to get to know your board of advisors and any current investors. Could you please provide a list of advisor and investor names in one table? Could you please note whether they are an investor or an advisor, and for the investors, it would be good to include which company they work with.

Query:

```
SELECT
   'advisor' AS type,
   first_name,
   last_name,
   NULL AS company_name
FROM
   advisor
UNION SELECT
   'investor' AS type, first_name, last_name, company_name
FROM
   investor
```

Output:

type	first_name	last_name	company_name
advisor	Barry	Beenthere	NULL
advisor	Cindy	Smartypants	NULL
advisor	Mary	Moneybags	NULL
advisor	Walter	White	NULL
investor	Montgomery	Burns	Springfield Syndicators
investor	Anthony	Stark	Iron Investors
investor	William	Wonka	Chocolate Ventures

8) We're interested in how well you have covered the most awarded actors. Of all the actors with three types of awards, for what % of them do we carry a film? And how about for actors with two types of awards? Same questions. Finally, how about actors with just one award?

Query:

```
SELECT
CASE
WHEN actor_award.awards = 'Emmy, Oscar, Tony ' THEN '3 awards'
WHEN actor_award.awards IN ('Emmy, Oscar', 'Emmy, Tony', 'Oscar, Tony') THEN '2 awards'
ELSE '1 award'
END AS number_of_awards,
AVG(CASE WHEN actor_award.actor_id IS NULL THEN 0 ELSE 1 END) AS pct_w_atleast_one_film
```

```
FROM actor_award

GROUP BY

CASE

WHEN actor_award.awards = 'Emmy, Oscar, Tony ' THEN '3 awards'

WHEN actor_award.awards IN ('Emmy, Oscar', 'Emmy, Tony', 'Oscar, Tony') THEN '2 awards'

ELSE '1 award'

END;
```

Output:

number_of_awards	pct_w_atleast_one_film
3 awards	0.5714
2 awards	0.9242
1 award	0.8333