1903685

Shellya Nur Atqiya

SQL Assignment

1. Top 10 customers and their emails

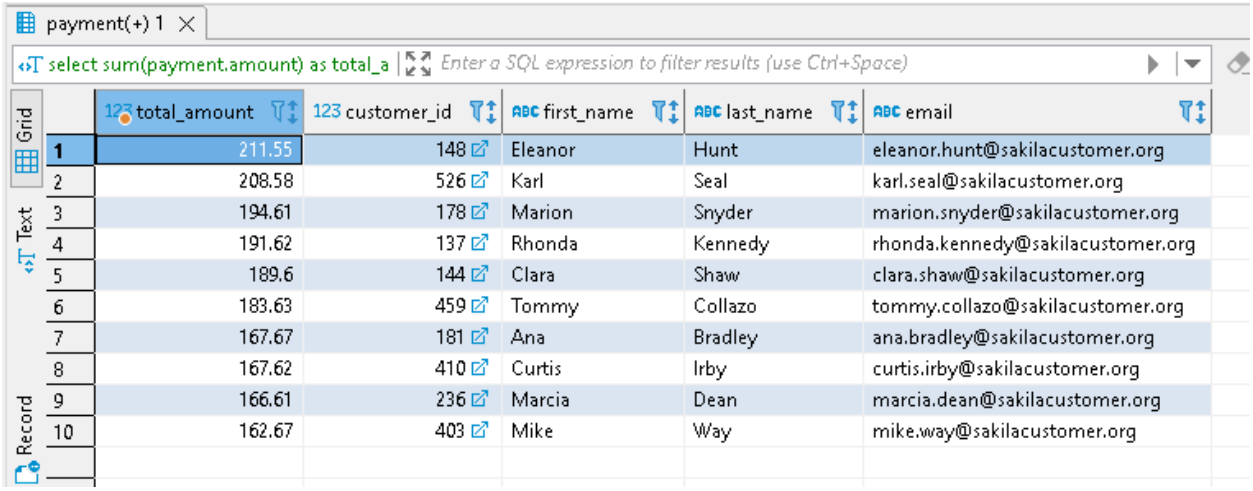
Generate the top 10 customers by total amount spent ordered from highest to lowest.What we need to do is sum the payment amount group by customer data (id, name and email), then order the list by total payment amount. The top 10 customers is the 10 customers that have the highest total amount. From the result, we got their emails and we can reward them.

The tables to join: payment > customer

- SQL Query:

```
select sum(payment.amount) as total_amount, payment.customer_id ,
customer.first_name, customer.last_name, customer.email
from payment
join customer
on payment.customer_id = customer.customer_id
group by payment.customer_id, customer.first_name, customer.last_name, customer.email
order by total_amount DESC
limit 10
```

- Query Result:



payment(+) 1

select sum(payment.amount) as total_a | Enter a SQL expression to filter results (use Ctrl+Space)

Grid | Text | Record

	total_amount	customer_id	first_name	last_name	email
1	211.55	148	Eleanor	Hunt	eleanor.hunt@sakilacustomer.org
2	208.58	526	Karl	Seal	karl.seal@sakilacustomer.org
3	194.61	178	Marion	Snyder	marion.snyder@sakilacustomer.org
4	191.62	137	Rhonda	Kennedy	rhonda.kennedy@sakilacustomer.org
5	189.6	144	Clara	Shaw	clara.shaw@sakilacustomer.org
6	183.63	459	Tommy	Collazo	tommy.collazo@sakilacustomer.org
7	167.67	181	Ana	Bradley	ana.bradley@sakilacustomer.org
8	167.62	410	Curtis	Irby	curtis.irby@sakilacustomer.org
9	166.61	236	Marcia	Dean	marcia.dean@sakilacustomer.org
10	162.67	403	Mike	Way	mike.way@sakilacustomer.org

2. The bottom 10 customers and their emails

Generate the bottom 10 customers by total amount spent ordered from lowest to highest.What we need to do is sum the payment amount group by customer data (id, name and email), then order

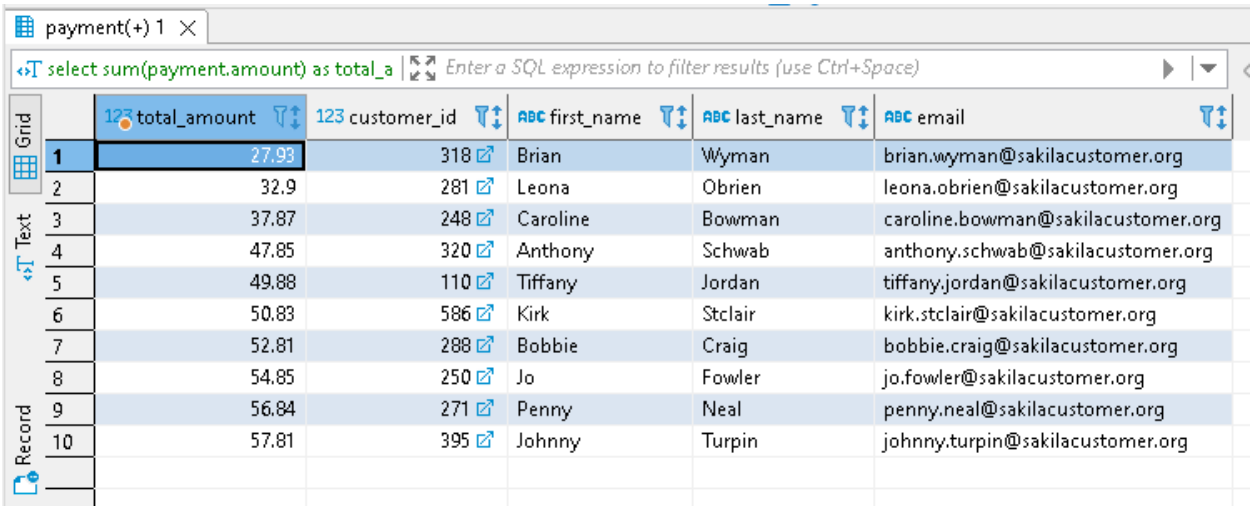
the list by total payment amount. The bottom 10 customers is the 10 customers that have the lowest total amount.

The tables to join: payment > customer

- SQL Query:

```
select sum(payment.amount) as total_amount, payment.customer_id ,
customer.first_name, customer.last_name, customer.email
from payment
join customer
on payment.customer_id = customer.customer_id
group by payment.customer_id, customer.first_name, customer.last_name, customer.email
order by total_amount ASC
limit 10
```

- Query Result:



	total_amount	customer_id	first_name	last_name	email
1	27.93	318	Brian	Wyman	brian.wyman@sakilacustomer.org
2	32.9	281	Leona	Obrien	leona.obrien@sakilacustomer.org
3	37.87	248	Caroline	Bowman	caroline.bowman@sakilacustomer.org
4	47.85	320	Anthony	Schwab	anthony.schwab@sakilacustomer.org
5	49.88	110	Tiffany	Jordan	tiffany.jordan@sakilacustomer.org
6	50.83	586	Kirk	Stclair	kirk.stclair@sakilacustomer.org
7	52.81	288	Bobbie	Craig	bobbie.craig@sakilacustomer.org
8	54.85	250	Jo	Fowler	jo.fowler@sakilacustomer.org
9	56.84	271	Penny	Neal	penny.neal@sakilacustomer.org
10	57.81	395	Johnny	Turpin	johnny.turpin@sakilacustomer.org

3. The most profitable movie genres (ratings)

We have to ratings the most profitable movie genres by demands and sales. We can find out the demand by calculating how many customers have borrowed films grouped by film genre, and the total number of sales by the sum total. The highest total demand and total sales is the most profitable movie genres.

The tables to join: category > film_category > inventory > rental > payment

- SQL Query:

```
select category.name as genre, count(payment.customer_id) as total_demand,
sum(amount) as total_amount_sales
from category
join film_category on film_category.category_id = category.category_id
join inventory on inventory.film_id = film_category.film_id
join rental on rental.inventory_id = inventory.inventory_id
join payment on payment.rental_id = rental.rental_id
```

```
group by genre
order by total_demand DESC, total_amount_sales DESC
```

- Query Result:

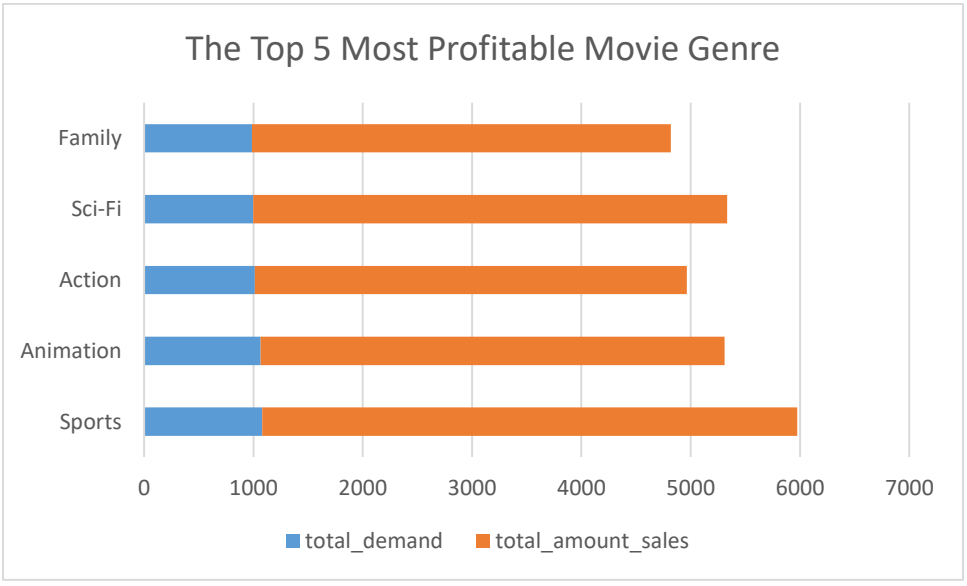
category 1

select category.n | Enter a SQL expression to filter results (use Ctrl+Space)

Grid | Text

	genre	total_demand	total_amount_sales
1	Sports	1,081	4,892.19
2	Animation	1,065	4,245.31
3	Action	1,013	3,951.84
4	Sci-Fi	998	4,336.01
5	Family	988	3,830.15
6	Drama	953	4,118.46
7	Foreign	953	3,934.47
8	Documentary	937	3,749.65
9	Games	884	3,922.18
10	New	864	3,966.38
11	Children	861	3,309.39
12	Classics	860	3,353.38
13	Comedy	851	4,002.48
14	Horror	773	3,401.27
15	Travel	765	3,227.36
16	Music	750	3,071.52

- Visualization (Excel):



From the result, we know that sports is the most profitable genre because the sports's demands and total amount of sales are the highest. This information help the store to make sure the sports genre never run out of stock.

4. Total movies that were returned late, early, and on time

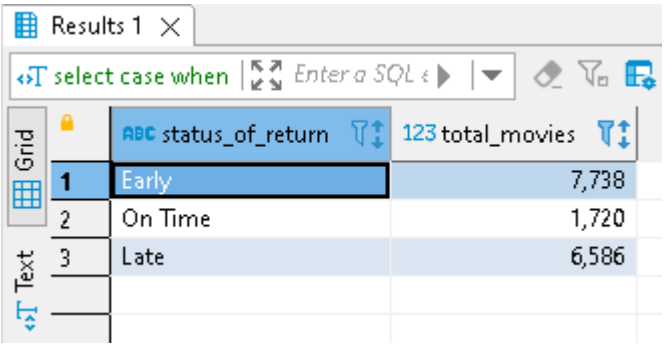
To see the total movies that were returned late, early, and on time we can count how many days the customers have been borrowed the movies, started from the rental date to the return date and compare it with rental duration.

The tables to join: film > inventory > rental

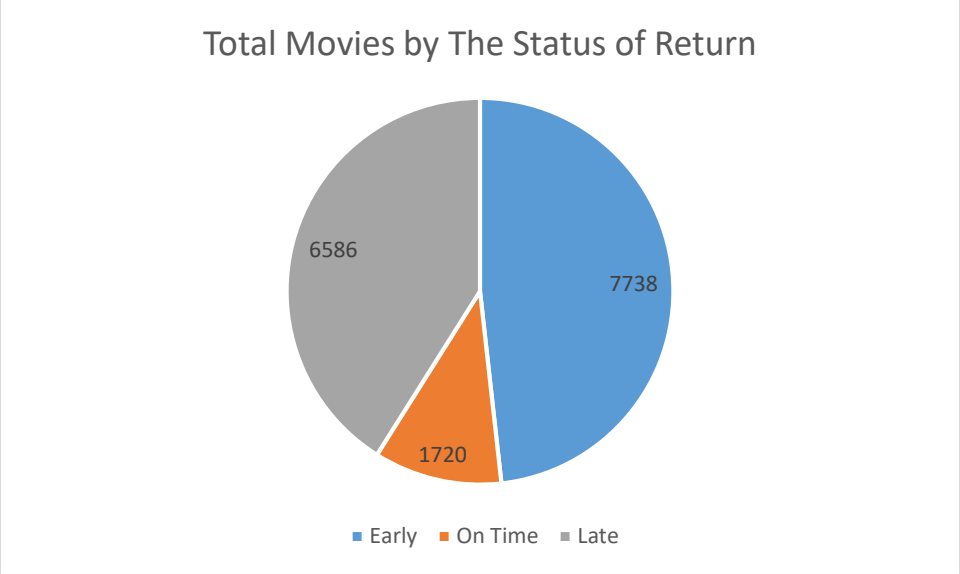
- SQL Query:

```
select case
       when rental_duration > date_part('day',return_date-rental_date) then 'Early'
       when rental_duration = date_part('day',return_date-rental_date) then 'On Time'
       else 'Late'
       end as status_of_return
       , count(rental.rental_id) as Total_Movies
from film
inner join inventory on film.film_id=inventory.film_id
inner join rental on inventory.inventory_id=rental.inventory_id
group by status_of_return
```

- Query Result:



- Visualization (Excel):



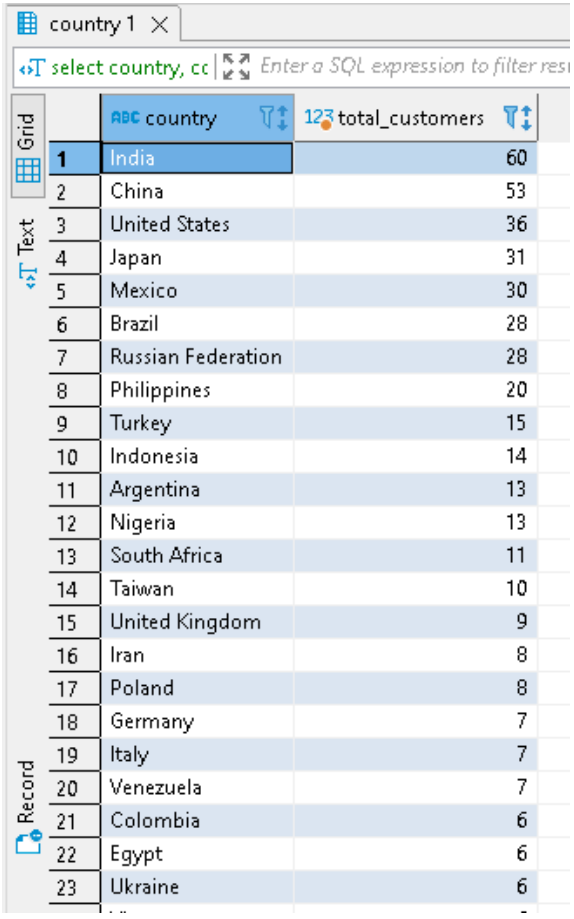
5. Customer base in the countries where we have a presence

The tables to join: country > city > address > customer

- SQL Query:

```
select country, count(customer_id) as total_customers
from country
join city on city.country_id = country.country_id
join address on address.city_id = city.city_id
join customer on customer.address_id = address.address_id
group by country
order by total_customers desc, country ASC
```

- Query Result:

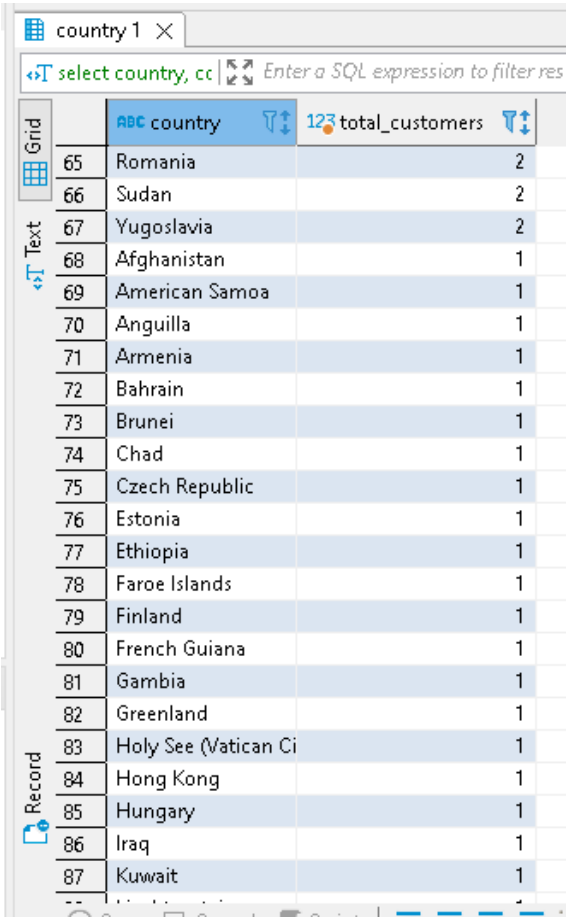


country 1

select country, cc | Enter a SQL expression to filter res

Grid | Text | Record

	country	total_customers
1	India	60
2	China	53
3	United States	36
4	Japan	31
5	Mexico	30
6	Brazil	28
7	Russian Federation	28
8	Philippines	20
9	Turkey	15
10	Indonesia	14
11	Argentina	13
12	Nigeria	13
13	South Africa	11
14	Taiwan	10
15	United Kingdom	9
16	Iran	8
17	Poland	8
18	Germany	7
19	Italy	7
20	Venezuela	7
21	Colombia	6
22	Egypt	6
23	Ukraine	6



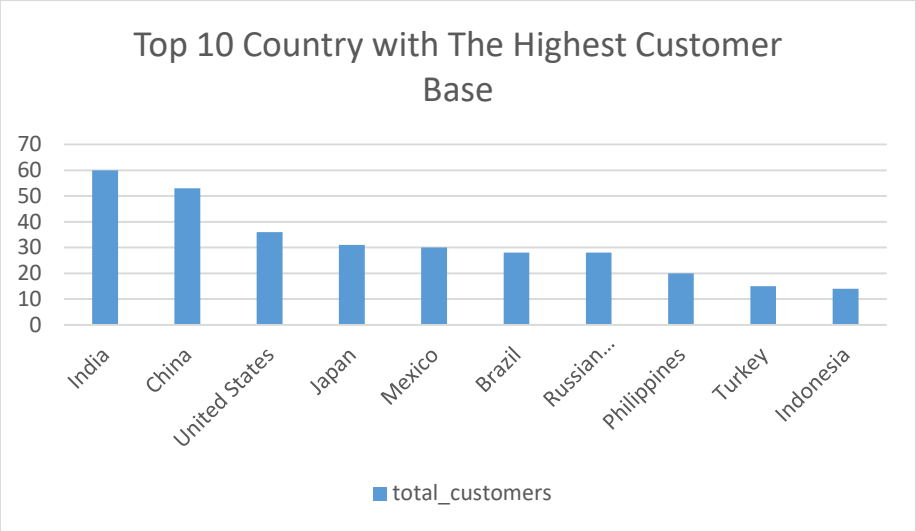
country 1

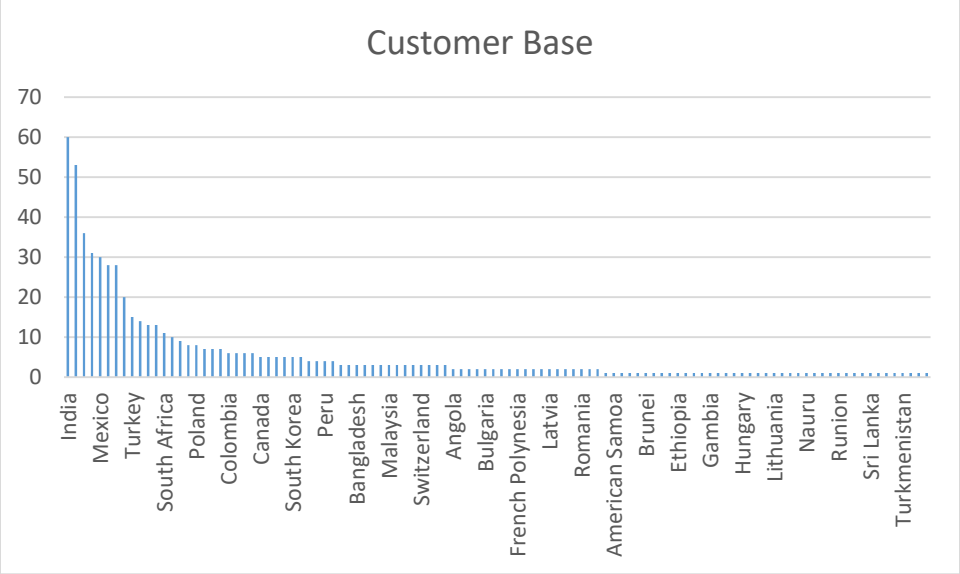
select country, cc | Enter a SQL expression to filter res

Grid | Text | Record

	country	total_customers
65	Romania	2
66	Sudan	2
67	Yugoslavia	2
68	Afghanistan	1
69	American Samoa	1
70	Anguilla	1
71	Armenia	1
72	Bahrain	1
73	Brunei	1
74	Chad	1
75	Czech Republic	1
76	Estonia	1
77	Ethiopia	1
78	Faroe Islands	1
79	Finland	1
80	French Guiana	1
81	Gambia	1
82	Greenland	1
83	Holy See (Vatican Ci	1
84	Hong Kong	1
85	Hungary	1
86	Iraq	1
87	Kuwait	1

- Visualization





There's 108 countries and out of all the countries, India have the highest value with a customer base of 60. Afghanistan and 40 other countries come last with a customer base of 1.

6. The most profitable country for the business

To find out the most profitable country, sum up the total amount of sales. The highest total amount of sales is the most profitable country for the business.

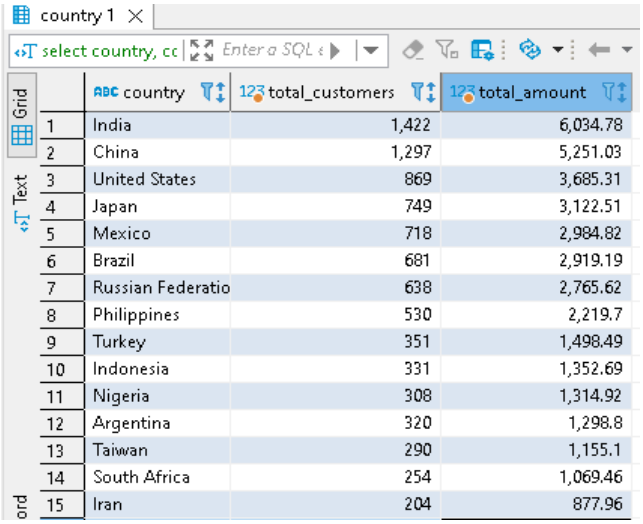
The tables to join: country > city > address > customer

- SQL Query:

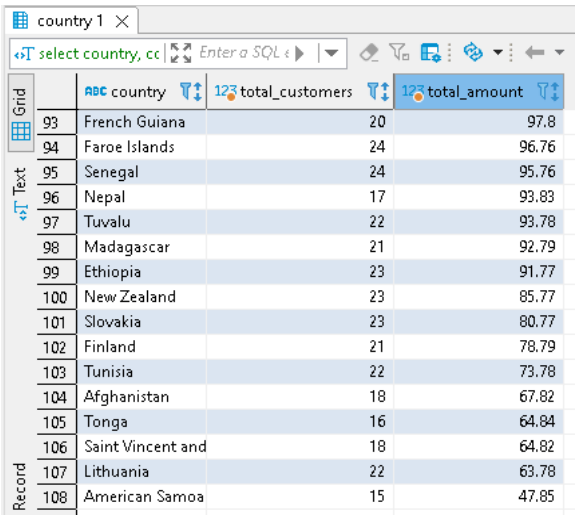
```
select country, count(customer_id) as total_customers
from country
```

```
join city on city.country_id = country.country_id
join address on address.city_id = city.city_id
join customer on customer.address_id = address.address_id
group by country
order by total_customers desc, country asc
```

- Query Result:

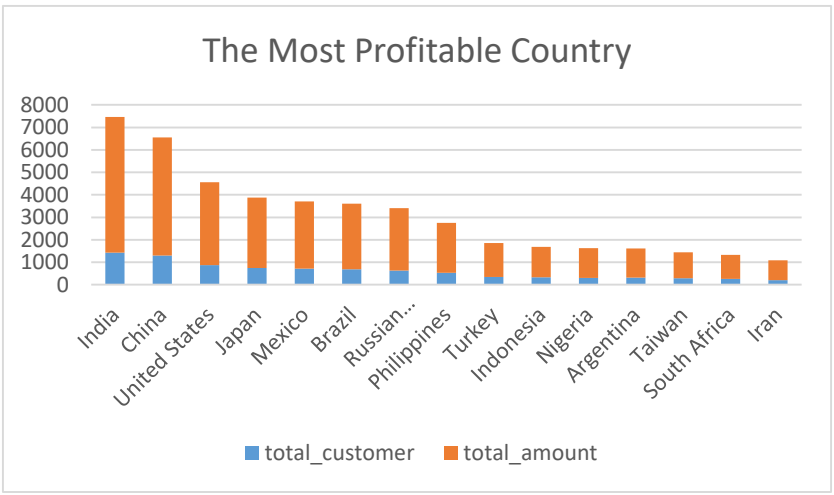


	country	total_customers	total_amount
1	India	1,422	6,034.78
2	China	1,297	5,251.03
3	United States	869	3,685.31
4	Japan	749	3,122.51
5	Mexico	718	2,984.82
6	Brazil	681	2,919.19
7	Russian Federatio	638	2,765.62
8	Philippines	530	2,219.7
9	Turkey	351	1,498.49
10	Indonesia	331	1,352.69
11	Nigeria	308	1,314.92
12	Argentina	320	1,298.8
13	Taiwan	290	1,155.1
14	South Africa	254	1,069.46
15	Iran	204	877.96



	country	total_customers	total_amount
93	French Guiana	20	97.8
94	Faroe Islands	24	96.76
95	Senegal	24	95.76
96	Nepal	17	93.83
97	Tuvalu	22	93.78
98	Madagascar	21	92.79
99	Ethiopia	23	91.77
100	New Zealand	23	85.77
101	Slovakia	23	80.77
102	Finland	21	78.79
103	Tunisia	22	73.78
104	Afghanistan	18	67.82
105	Tonga	16	64.84
106	Saint Vincent and	18	64.82
107	Lithuania	22	63.78
108	American Samoa	15	47.85

- Visualization:



Not so different with previous result, India top the chart with the highest total amount of sales that name India as the most profitable country.

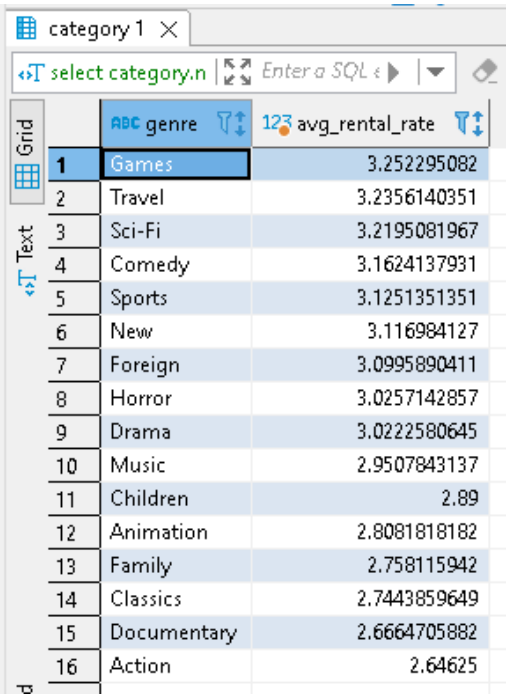
7. The average rental rate per movie genre (rating)

The tables to join: category > film_category > film

- SQL Query:

```
select category.name as genre, avg(film.rental_rate) as avg_rental_rate
from category
join film_category on film_category.category_id = category.category_id
join film on film.film_id = film_category.film_id
group by genre
order by avg_rental_rate DESC
```

- Query Result:



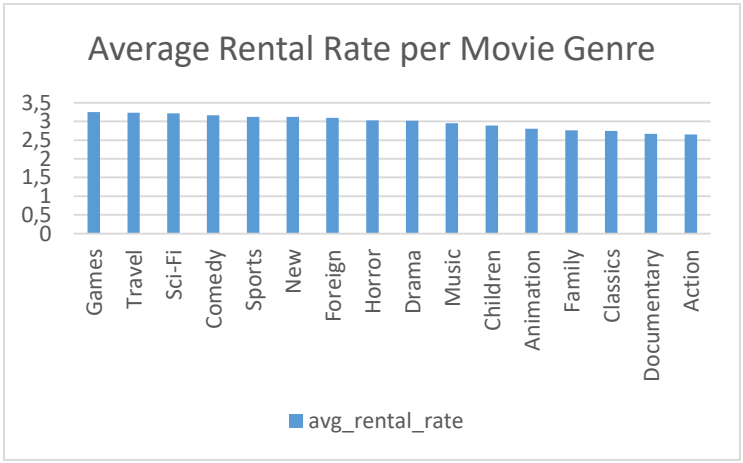
category 1

select category.n | Enter a SQL e

Grid | Text

	genre	avg_rental_rate
1	Games	3.252295082
2	Travel	3.2356140351
3	Sci-Fi	3.2195081967
4	Comedy	3.1624137931
5	Sports	3.1251351351
6	New	3.116984127
7	Foreign	3.0995890411
8	Horror	3.0257142857
9	Drama	3.0222580645
10	Music	2.9507843137
11	Children	2.89
12	Animation	2.8081818182
13	Family	2.758115942
14	Classics	2.7443859649
15	Documentary	2.6664705882
16	Action	2.64625

- Visualization:



The table and graph above shows average rental rate per movie genre and showed us that the games genre has the highest rental rate.