

1. What is the most watched film (number of rentals) by each category?

```
select ranking.category_id, c.name, ranking.film_id, f.title, ranking.rentals
from(select fcr.category_id, fcr.film_id, rentals,
dense_rank() over (partition by category_id order by rentals desc) as rankOfFilm
from(select fc.film_id, fc.category_id, count(*) as rentals
from rental as r inner join inventory as i on i.inventory_id=r.inventory_id inner join film_category as
fc on fc.film_id=i.film_id group by 1,2) as fcr ) as ranking
inner join category as c on c.category_id=ranking.category_id inner join film as f on
f.film_id=ranking.film_id where rankOfFilm=1;
```

The screenshot shows the MySQL Workbench interface. The main editor contains a SQL query (lines 157-164) that uses a window function to find the most watched film in each category. The query is as follows:

```

157 -- What is the most watched film (number of rentals) by each
158 • select ranking.category_id, c.name, ranking.film_id, f.title
159 from(select fcr.category_id, fcr.film_id, rentals,
160 dense_rank() over (partition by category_id order by rentals
161 from(select fc.film_id, fc.category_id, count(*) as rentals
162 from rental as r inner join inventory as i on i.inventory_id = r.inventory_id
163 inner join category as c on c.category_id = ranking.category_id
164 --

```

The Result Grid shows the following data:

category_id	name	film_id	title	rentals
1	Action	748	RUGRATS SHAKESPEARE	30
2	Animation	489	SUSPECTS QUILLIS	32
3	Children	735	ROBBERS JOON	31
4	Classics	891	TIMBERLAND SKY	31

The Output tab shows the execution log:

#	Time	Action	Message	Duration / Fetch
1	00:39:10	use sakila	0 row(s) affected	0.000 sec
2	00:39:13	select ranking.category_id, c.name, ranking.film_id, f.title, ranking.rentals from(select fcr.category_id, fcr.film_id, rentals, dense_rank() over (partition by category_id order by rentals) as ranking from(select fc.film_id, fc.category_id, count(*) as rentals from rental as r inner join inventory as i on i.inventory_id = r.inventory_id inner join category as c on c.category_id = ranking.category_id)	21 row(s) returned	0.016 sec / 0.000 sec

2. What is the total rental amount per category?

select a.name as "Category Name", sum(a.amount) as "Total Amount"

from (select c.name, p.amount

from category c

inner join film_category fc

on fc.category_id = c.category_id

inner join film f

on fc.film_id = f.film_id

inner join inventory i

on f.film_id = i.film_id

inner join rental r

on i.inventory_id = r.inventory_id

inner join payment p

on r.rental_id = p.rental_id) a

group by a.name;

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```
42 -- 2.. What is the total rental amount per category?
43 select a.name as "Category Name", sum(a.amount) as "Total Amount"
44 from (select c.name, p.amount
45 from category c
46 inner join film_category fc
47 on fc.category_id = c.category_id
48 inner join film f
49 on fc.film_id = f.film_id
```

The Results Grid shows the following data:

Category Name	Total Amount
Action	4375.85
Animation	4656.30
Children	3655.55
Classics	3639.99

The Action Output pane shows the execution log:

#	Time	Action	Message	Duration / Fetch
1	00:39:10	use sakila	0 row(s) affected	0.000 sec
2	00:39:13	select ranking category_id, c.name, ranking film_id, f.title, ranking rentals from select for category_id, for film_id, r...	21 row(s) returned	0.016 sec / 0.000 sec
3	00:40:11	select a.name as "Category Name", sum(a.amount) as "Total Amount" from select c.name, p.amount from cate...	16 row(s) returned	0.141 sec / 0.000 sec

3. For each category, list the customer who is the second most renter.

```
select * from (select c.name, r.customer_id, count(r.rental_id) As "TOTAL RENTALS",
dense_rank() over (partition by c.name order by count(r.rental_id) desc) AS RANKK
from category c
inner join film_category fc
on fc.category_id = c.category_id
inner join film f
on fc.film_id = f.film_id
inner join inventory i
on f.film_id = i.film_id
inner join rental r
on i.inventory_id = r.inventory_id
group by c.name, r.customer_id
order by count(r.rental_id) desc) a
where rankk =2;
```

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```

76 group by customer_id) a;
77 -- 3. For each category, list the customer who is the second
78 select * from (select c.name, r.customer_id, count(r.rental_id)
79 rank() over (partition by c.name order by count(r.rental_id)
80 from category c
81 inner join film_category fc
82 on fc.category_id = c.category_id
83 inner join film f

```

The Results Grid shows the following data:

name	customer_id	TOTAL RENTALS	RANK
Documentary	257	7	2
Games	522	7	2
Sports	314	6	2
Sports	369	6	2

The Output tab shows the execution log:

#	Time	Action	Message	Duration / Fetch
1	00:39:10	use sakila	0 rows(s) affected	0.000 sec
2	00:39:13	select ranking category_id, c.name, ranking film_id, f.title, ranking rentals from(select for category_id, for film_id, r...	21 row(s) returned	0.016 sec / 0.000 sec
3	00:40:11	select a name as "Category Name", sum(a amount) as "Total Amount" from (select c.name, p amount from cate...	16 row(s) returned	0.141 sec / 0.000 sec
4	00:41:45	select * from (select c.name, r.customer_id, count(r.rental_id) As "TOTAL RENTALS", rank() over (partition by c...	28 row(s) returned	0.156 sec / 0.000 sec

4. What is the second most popular movie title?

```

select * from (select f.title, count(r.rental_id),
rank() over(order by count(r.rental_id) desc) AS RANKMX
from film f
inner join inventory i
on f.film_id = i.film_id
inner join rental r
on i.inventory_id = r.inventory_id
group by f.title
order by count(r.rental_id) desc)a
where RANKMX=2;

```

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```

117 -- What is the second most popular movie title?
118 select * from (select f.title, count(r.rental_id),
119 rank() over(order by count(r.rental_id) desc) AS RANKMX
120 from film f
121 inner join inventory i
122 on f.film_id = i.film_id
123 inner join rental r
124 on i.inventory_id = r.inventory_id

```

The result grid shows the following data:

title	count(r.rental_id)	RANKMX
ROCKEER MOTHER	33	2

The output pane shows the execution log with the following messages:

```

1 00:39:10 use sakila 0 rows(s) affected 0.000 sec
2 00:39:13 select ranking category_id, c.name, ranking film_id, f.title, ranking rentals from(select for category_id, for film_id, r... 21 row(s) returned 0.016 sec / 0.000 sec
3 00:40:11 select a name as "Category Name", sum(a amount) as "Total Amount" from (select c.name, p.amount from cate... 16 row(s) returned 0.141 sec / 0.000 sec
4 00:41:45 select "from (select c.name, r.customer_id, count(r.rental_id) As "TOTAL RENTALS", rank() over (partition by c... 28 row(s) returned 0.000 sec
5 00:44:25 select "from (select c.name, r.customer_id, count(r.rental_id) As "TOTAL RENTALS", rank() over (partition by c... 28 row(s) returned 0.000 sec
6 00:44:32 select "from (select f.title, count(r.rental_id), rank() over(order by count(r.rental_id) desc) AS RANKMX from film f ... 1 row(s) returned 0.000 sec

```

5. . What are the most popular categories?

select c.category_id as "Category ID", c.name as "Category Name", a.rentals as "Count of Rentals"
from (select f.film_id, f.title, count(*) as rentals

from rental r

inner join inventory i

on r.inventory_id = i.inventory_id

inner join film f

on i.film_id = f.film_id

group by 1,2) a

inner join film_category fc

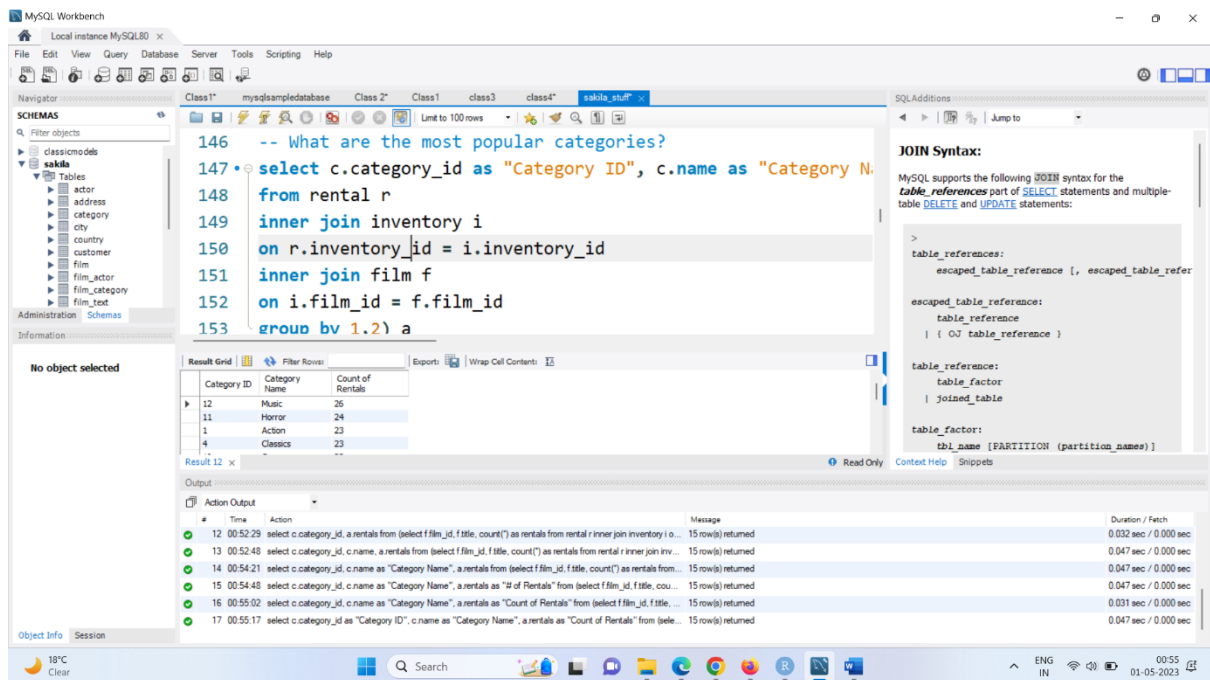
on a.film_id = fc.film_id

inner join category c

on c.category_id = fc.film_id

group by c.category_id

order by a.rentals desc;



6. . What are the top 10 most rented movies by category?

select dd.film_id, fcr.title, fcr.rankk, fcr.rentals

from (select a.film_id, a.title, a.rentals, row_number() over (order by rentals desc) rankk from (select f.film_id, f.title, count(*) as rentals

from rental r

inner join inventory i

on r.inventory_id = i.inventory_id

inner join film f

on f.film_id = i.film_id

group by f.film_id)a) fcr

inner join film dd

on dd.film_id = fcr.film_id

group by 1

order by rankk asc

limit 10;

The screenshot shows the MySQL Workbench interface. The main editor contains a SQL query (lines 225-232) that selects the top 10 most rented movies by category. The query uses a subquery to calculate the dense rank of movies based on rental counts. The results are displayed in the 'Result Grid' tab, showing columns: film_id, title, rank, and rentals. The first five results are:

film_id	title	rank	rentals
103	BUCKET BROTHERHOOD	1	34
728	ROCKETEER MOTHER	2	33
767	SCALWAG DUCK	3	32
331	FORWARD TEMPLE	3	32
489	JUGGLER HARDLY	3	32

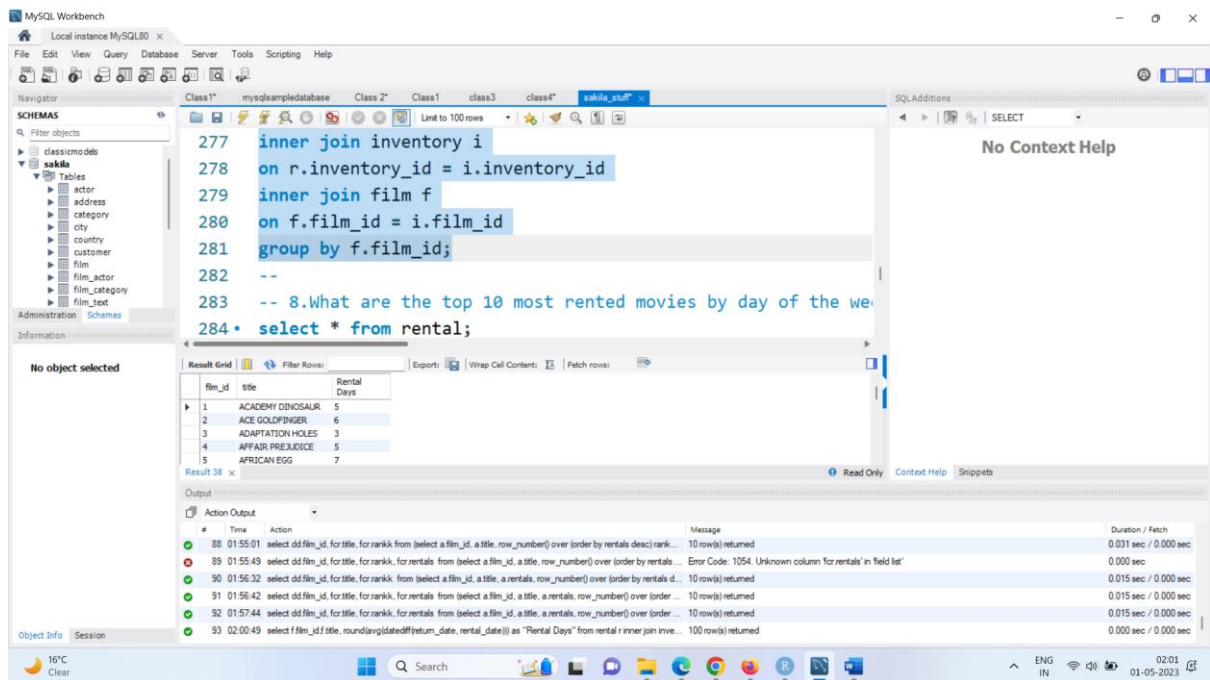
The 'Output' tab shows the execution log with timestamps and messages for each statement. The status bar at the bottom indicates the system is at 16°C and the date is 01-05-2023.

7. What are the average rental days for each movie?

```

select f.film_id,f.title, round(avg(datediff(return_date, rental_date))) as "Rental Days"
from rental r
inner join inventory i
on r.inventory_id = i.inventory_id
inner join film f
on f.film_id = i.film_id
group by f.film_id;

```



8. What are the top 10 most rented movies by day of the week?

```

select fc.film_id as "ID Category", fc.title as "Popular Movies", fc.daynames "Day of the Week", fc.rankk
as "Rank Order", fc.rentals as "Number of Rentals" from (select a.film_id, a.title, a.daynames, a.rentals,
row_number() over (partition by a.daynames order by rentals desc) as rankk from (select
f.film_id, f.title, dayname(r.rental_date) as daynames, count(*) as rentals

```

```

from rental r

```

```

inner join inventory i

```

```

on r.inventory_id = i.inventory_id

```

```

inner join film f

```

```

on i.film_id = f.film_id

```

```

group by 1,2,3

```

```

order by 4 desc) a) fc

```

```

where fc.rankk in (1,2,3,4,5,6,7,8,9,10)

```

```

order by fc.daynames;

```


MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

Filter objects

SCHEMAS

classmodels

sakila

Tables

actor

address

category

city

country

customer

film

film_actor

film_category

film_text

Administration Schemas

Information

No object selected

Result Grid

ID	Category	Popular Movies	Day of the Week	Rank Order	Number of Rentals
450	IDOLS SNATCHERS	Friday	10	7	
397	HANKY OCTOBER	Monday	1	9	
945	VIRGINIAN PLUTO	Monday	2	9	
109	BUTTERFLY CHOCOLAT	Monday	3	9	
789	SHOCK CABIN	Monday	4	9	

Result 55

Output

Action Output

#	Time	Action	Message	Duration / Fetch
104	02:27:02	select fc.film_id,fc.title,fc.daynames "Day of the Week",fc.rank as "Rank Order",fc.rentals as "Number of R...	Error Code: 1054. Unknown column 'fc.title' in field list	0.000 sec
105	02:27:25	select fc.film_id,fc.title,fc.daynames "Day of the Week",fc.rank as "Rank Order",fc.rentals as "Number of R...	Error Code: 1054. Unknown column 'a title' in field list	0.000 sec
106	02:27:41	select fc.film_id,fc.title,fc.daynames "Day of the Week",fc.rank as "Rank Order",fc.rentals as "Number of R...	Error Code: 1055. Expression #3 of SELECT list is not in GROUP BY clause and contains nonaggregated colu...	0.000 sec
107	02:27:53	select fc.film_id,fc.title,fc.daynames "Day of the Week",fc.rank as "Rank Order",fc.rentals as "Number of R...	70 row(s) returned	0.063 sec / 0.000 sec
108	02:28:41	select fc.film_id as "ID Category",fc.title as "Movie",fc.daynames "Day of the Week",fc.rank as "Rank Order...	70 row(s) returned	0.063 sec / 0.000 sec
109	02:28:54	select fc.film_id as "ID Category",fc.title as "Popular Movies",fc.daynames "Day of the Week",fc.rank as "R...	70 row(s) returned	0.046 sec / 0.000 sec

Object Info Session

15°C Clear

Search

ENG IN

02:29 02-05-2023

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

Filter objects

SCHEMAS

classmodels

sakila

Tables

actor

address

category

city

country

customer

film

film_actor

film_category

film_text

Administration Schemas

Information

No object selected

Result Grid

ID	Category	Popular Movies	Day of the Week	Rank Order	Number of Rentals
789	SHOCK CABIN	Monday	9	7	
845	STEPMOM DREAM	Monday	10	7	
130	CELEBRITY HORN	Saturday	1	11	
100	BROOKLYN DESERT	Saturday	2	9	
846	WATERMELON ADORN I N	Saturday	3	9	

Result 57

Output

Action Output

#	Time	Action	Message	Duration / Fetch
109	02:28:54	select fc.film_id as "ID Category",fc.title as "Popular Movies",fc.daynames "Day of the Week",fc.rank as "R...	70 row(s) returned	0.046 sec / 0.000 sec
110	02:29:15	select fc.film_id as "ID Category",fc.title as "Popular Movies",fc.daynames "Day of the Week",fc.rank as "R...	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your MySQL s...	0.000 sec
111	02:29:18	select fc.film_id as "ID Category",fc.title as "Popular Movies",fc.daynames "Day of the Week",fc.rank as "R...	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your MySQL s...	0.000 sec
112	02:29:24	select fc.film_id as "ID Category",fc.title as "Popular Movies",fc.daynames "Day of the Week",fc.rank as "R...	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your MySQL s...	0.000 sec
113	02:29:32	select fc.film_id as "ID Category",fc.title as "Popular Movies",fc.daynames "Day of the Week",fc.rank as "R...	70 row(s) returned	0.062 sec / 0.000 sec
114	02:29:34	select fc.film_id as "ID Category",fc.title as "Popular Movies",fc.daynames "Day of the Week",fc.rank as "R...	70 row(s) returned	0.047 sec / 0.000 sec

Object Info Session

15°C Clear

Search

ENG IN

02:30 02-05-2023

9. What is the total rental revenue (total amount of all rentals) by day of the week?

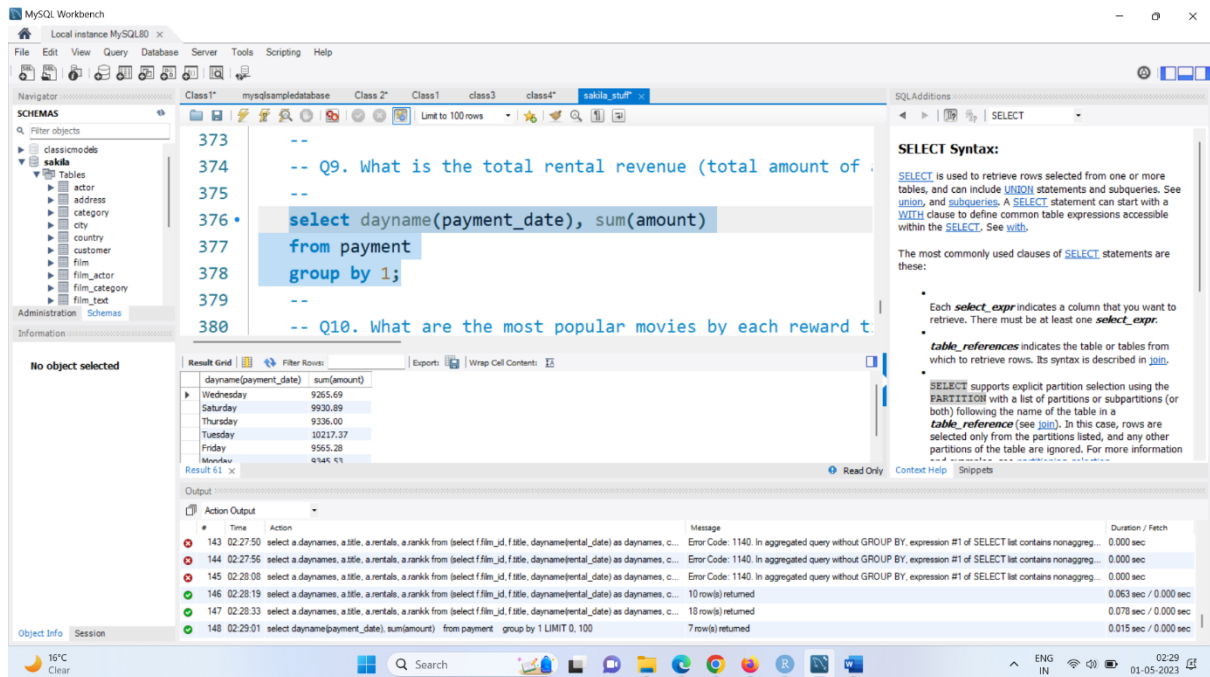
```

select dayname(payment_date), sum(amount)

from payment

group by 1;

```



10. . What are the most popular days to rent movies?

```

select

sum(case when dayname(rental_date) ='Tuesday' then 1 else 0 end) as TUESDAY,

sum(case when dayname(rental_date) ='Wednesday' then 1 else 0 end) as WEDNESDAY,

sum(case when dayname(rental_date) ='Thursday' then 1 else 0 end) as THURSDAY,

sum(case when dayname(rental_date) ='Friday' then 1 else 0 end) as FRIDAY,

sum(case when dayname(rental_date) ='Saturday' then 1 else 0 end) as SATURDAY,

sum(case when dayname(rental_date) ='Sunday' then 1 else 0 end) as SUNDAY,

```

```
sum(case when dayname(rental_date)='Monday' then 1 else 0 end) as Monday  
from rental;
```

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```
group by a.day_rented;  
  
select  
sum(case when dayname(rental_date)='Tuesday' then 1 else 0 end) as Tuesday,  
sum(case when dayname(rental_date)='Wednesday' then 1 else 0 end) as Wednesday,  
sum(case when dayname(rental_date)='Thursday' then 1 else 0 end) as Thursday,  
sum(case when dayname(rental_date)='Friday' then 1 else 0 end) as Friday,  
sum(case when dayname(rental_date)='Saturday' then 1 else 0 end) as Saturday,  
sum(case when dayname(rental_date)='Sunday' then 1 else 0 end) as Sunday,  
sum(case when dayname(rental_date)='Monday' then 1 else 0 end) as Monday  
from rental  
group by a.day_rented;
```

The Results grid shows the following data:

TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY	Monday
2463	2231	2200	2272	2311	2320	2247

The Output tab shows the execution log with the following entries:

#	Time	Action	Message	Duration / Fetch
145	02:28:08	select a.daynames, a.title, a.rentals, a.rankk from (select f.film_id, f.title, dayname(rental_date) as daynames, c...	Error Code: 1140. In aggregated query without GROUP BY, expression #1 of SELECT list contains nonaggreg...	0.000 sec
146	02:28:19	select a.daynames, a.title, a.rentals, a.rankk from (select f.film_id, f.title, dayname(rental_date) as daynames, c...	10 row(s) returned	0.063 sec / 0.000 sec
147	02:28:33	select a.daynames, a.title, a.rentals, a.rankk from (select f.film_id, f.title, dayname(rental_date) as daynames, c...	18 row(s) returned	0.078 sec / 0.000 sec
148	02:29:01	select dayname(payment_date), sum(amount) from payment group by 1 LIMIT 0, 100	7 row(s) returned	0.015 sec / 0.000 sec
149	02:30:43	select sum(case when dayname(rental_date)='Tuesday' then 1 else 0 end) as TUESDAY, sum(case w...	1 row(s) returned	0.047 sec / 0.000 sec
150	02:31:14	select sum(case when dayname(rental_date)='Tuesday' then 1 else 0 end) as TUESDAY, sum(case w...	1 row(s) returned	0.032 sec / 0.000 sec

As we can see Tuesday is the most popular day with Total rentals at 2463 count.