mysql---sql

sql

codersqlsql

sql

sql

```
select[distinct]
from
joinleft join
on
where
group by
having
union
order by
limit
```

sql

```
from from --
join
on
where mysqlEXPLAIN EXTENDEDSHOW WARNING oracle group by
having
select
distinct
union
order by
```

PROCEDURE ANALYSE()

```
select * from actor PROCEDURE ANALYSE();
```

SHOW VARIABLES

```
mysql>SHOW VARIABLES LIKE '%quer%';
#long_query_time 10.000000 #
#slow_query_log ON #
#slow_query_log_file D:/Users/GODDESS/Documents/mysql/mysql_seven_slow.log #
```

show [session|global] status

```
show status like 'com_%';
#com_select
#com_insert
#com_update
#com_delete
# innodb
mysql>show status like 'innodb%'
mysql>show GLOBAL status LIKE 'slow%';
#show_queries
#
select concat(com_select / (com_select+com_insert+com_update+com_delete)* 100,'%');
#
select concat(com_insert+com_update+com_delete / (com_select+com_insert+com_update+com_delete) * 100,’%’);
```

mysqlsakila

https://dev.mysql.com/doc/index-other.html

sakilaDVD

1. DVD
2. DVD
3.
4.

```
+-------------------------------+
| Tables_in_sakila |
+-------------------------------+
| actor  |
| address  |
| category  |
| city  |
| country  |
| customer  |
| film  |
| film_actor <> |
| film_category  |
| film_text  |
| inventory  |
| language  |
| payment  |
| rental  |
| staff  |
| store  |
+-------------------------------+
```

sql

explain

```
EXPLAIN  SELECT xxx

1. EXPLAIN [EXTENDED] SELECT xxx
    “”SELECTSHOW WARNINGS MySQL
2. EXPLAIN PARTITIONS SELECT xxx
    EXPLAIN

      mysql> explain select sum(amount) from customer a, payment b where 1=1 and a.customer_id =
b.customer_id and a.email = 'PATRICIA.JOHNSON@sakilacustomer.org';

+----+-------------+-------+------------+------+--------------------+--------------------+---------+-------
---------------+------+----------+-------------+
      | id | select_type | table | partitions | type | possible_keys      | key                | key_len |
ref                  | rows | filtered | Extra       |
      +----+-------------+-------+------------+------+--------------------+--------------------+---------+-
---------------------+------+----------+-------------+ | 1 | SIMPLE      | a     | NULL       | ALL  | PRIM
ARY            | NULL               | NULL    | NULL                 |  599 |       10 | Using where |
      | 1 | SIMPLE      | b     | NULL       | ref  | idx_fk_customer_id | idx_fk_customer_id | 2       | s
akila.a.customer_id |   26 |      100 | NULL        |
      +----+-------------+-------+------------+------+--------------------+--------------------+---------+-
---------------------+------+----------+-------------+ 2 rows in set
```

1. select_type selectSIMPLE()PRIMARYUNIONunionSUBQUERY(select)
2. table
3. type mysql,

1	2	3	4	5	6	7	8
ALL	index	range	ref	eq_ref	const	system	NULL

- type=ALL mysql

```
mysql> explain SELECT * FROM actor where first_name='JENNIFER';
      +----+-------------+-------+------------+------+---------------+------+---------+------+------+------
----+-------------+
      | id | select_type | table | partitions | type | possible_keys | key  | key_len | ref  | rows |
filtered | Extra       |
      +----+-------------+-------+------------+------+---------------+------+---------+------+------+------
----+-------------+
      |  1 | SIMPLE      | actor | NULL       | ALL  | NULL          | NULL | NULL    | NULL |  200 |
10 | Using where |
      +----+-------------+-------+------------+------+---------------+------+---------+------+------+------
----+-------------+
```

- index

```
mysql> explain SELECT actor_id FROM actor;
      +----+-------------+-------+------------+-------+---------------+---------------------+---------+----
--+------+----------+-------------+
      | id | select_type | table | partitions | type  | possible_keys | key                 | key_len | ref
| rows | filtered | Extra       |
      +----+-------------+-------+------------+-------+---------------+---------------------+---------+----
--+------+----------+-------------+
      |  1 | SIMPLE      | actor | NULL       | index | NULL          | idx_actor_last_name | 137     |
NULL |  200 |      100 | Using index |
      +----+-------------+-------+------------+-------+---------------+---------------------+---------+----
--+------+----------+-------------+
```

- rangebetween<>.

```
mysql> explain SELECT * FROM actor where actor_id between 1 and 100;
      +----+-------------+-------+------------+-------+---------------+---------+---------+------+------+--
--------+-------------+
      | id | select_type | table | partitions | type  | possible_keys | key     | key_len | ref  | rows |
filtered | Extra       |
      +----+-------------+-------+------------+-------+---------------+---------+---------+------+------+--
--------+-------------+
      |  1 | SIMPLE      | actor | NULL       | range | PRIMARY       | PRIMARY | 2       | NULL |  100 |
100 | Using where |
      +----+-------------+-------+------------+-------+---------------+---------+---------+------+------+--
--------+-------------+
```

- ref.

```
mysql> explain select * from inventory where store_id = 1;
      +----+-------------+-----------+------------+------+----------------------+----------------------+---
------+-------+------+----------+-------+
      | id | select_type | table     | partitions | type | possible_keys        | key                  |
key_len | ref   | rows | filtered | Extra |
      +----+-------------+-----------+------------+------+----------------------+----------------------+---
------+-------+------+----------+-------+
      |  1 | SIMPLE      | inventory | NULL       | ref  | idx_store_id_film_id | idx_store_id_film_id | 1
| const | 2270 |      100 | NULL  |
      +----+-------------+-----------+------------+------+----------------------+----------------------+---
------+-------+------+----------+-------+
```

- eq_ref,

```
mysql> EXPLAIN SELECT * FROM order_data a left outer JOIN b2c_order_extensions b on a.order_id =
b.order_id;

+----+-------------+-------+------------+--------+---------------+-------------+---------+-----------------
--------+------+----------+-------------+
  | id | select_type | table | partitions | type | possible_keys | key | key_len | ref | rows | filtered |
Extra |

+----+-------------+-------+------------+--------+---------------+-------------+---------+-----------------
--------+------+----------+-------------+
  | 1 | SIMPLE | a | NULL | ALL | NULL | NULL | NULL | NULL | 1772 | 100 | NULL |
  | 1 | SIMPLE | b | NULL | eq_ref | uk_order_id | uk_order_id | 302 | trade_center.a.order_id | 1 | 100 |
Using where |

+----+-------------+-------+------------+--------+---------------+-------------+---------+-----------------
--------+------+----------+-------------+
```

- constsystemMySQLwhereMySQL

```
mysql> explain select * from actor where actor_id =1;
+----+-------------+-------+------------+-------+---------------+---------+---------+-------+------+-------
---+-------+
| id | select_type | table | partitions | type  | possible_keys | key     | key_len | ref   | rows |
filtered | Extra |
+----+-------------+-------+------------+-------+---------------+---------+---------+-------+------+-------
---+-------+
|  1 | SIMPLE      | actor | NULL       | const | PRIMARY       | PRIMARY | 2       | const |    1 |
100 | NULL  |
+----+-------------+-------+------------+-------+---------------+---------+---------+-------+------+-------
---+-------+
```

- NULLMySQL

```
mysql> explain select * from actor where actor_id = (select min(actor_id) from actor);
+----+-------------+-------+------------+-------+---------------+---------+---------+-------+------+-------
---+------------------------------+
| id | select_type | table | partitions | type | possible_keys | key | key_len | ref | rows | filtered | Ex
tra |
+----+-------------+-------+------------+-------+---------------+---------+---------+-------+------+-------
---+------------------------------+
| 1 | PRIMARY | actor | NULL | const | PRIMARY | PRIMARY | 2 | const | 1 | 100 | NULL |
| 2 | SUBQUERY | NULL | NULL | NULL | NULL | NULL | NULL | NULL | NULL | NULL | Select tables optimized
away |
+----+-------------+-------+------------+-------+---------------+---------+---------+-------+------+-------
---+------------------------------+
```

1. possible_keys MySQL
2. ref .
3. rows MySQL
4. Extra

```
using index
using where
using index condition
using index & using where
```

Optimizer trace

Optimizer traceMySQL5.6, sql,information_schema.OPTIMIZER_TRACE # SET optimizer_trace='enabled=on';
# SET OPTIMIZER_TRACE_MAX_MEM_SIZE=1000000; SET END_MARKERS_IN_JSON=ON; SET optimizer_trace_limit = 1; SHOW VARIABLES LIKE '%optimizer_trace%';

#sql SELECT * FROM information_schema.OPTIMIZER_TRACE;

Query Profiler Query Profiling

MySQL Query Profiler Query Query CPUIOIPCSWAP PAGE FAULTSCONTEXT SWITCHE Query MySQL

profiling

```
mysql> select @@profiling; +-------------+
| @@profiling | +-------------+
| 1 | +-------------+
mysql>set profiling=1;
```

sqlprofiles

```
mysql> show profiles;
+----------+----------+---------------------+
| Query_ID | Duration | Query |
+----------+----------+---------------------+
| 1 | 0.003667 | select * from actor |
+----------+----------+---------------------+

mysql> show profile [allxxx] for query 1;
+----------------------+----------+
| Status | Duration |
+----------------------+----------+
| starting | 7.4E-5 |
| checking permissions | 4E-6 |
| Opening tables | 0.003192 |
| init | 2.1E-5 |
| System lock | 2E-5 |
| optimizing | 4E-6 |
| statistics | 1E-5 |
| preparing | 8E-6 |
| executing | 1E-6 |
| Sending data | 0.000178 |
| end | 2E-6 |
| query end | 5E-6 |
| closing tables | 8E-6 |
| freeing items | 0.000123 |
| cleaning up | 1.8E-5 |
+----------------------+----------+

mysql>SELECT STATE, SUM(DURATION) AS Total_R,ROUND( 100 * SUM(DURATION) / (SELE
CT SUM(DURATION) FROM INFORMATION_SCHEMA.PROFILING WHERE QUERY_ID = 1), 2) AS Pct_R, CO
T(*) AS Calls,SUM(DURATION) / COUNT(*) AS "R/Call" FROM INFORMATION_SCHEMA.PROFILING WHERE QUERY_ID = 1
GROUP BY STATE O
ER BY Total_R DESC;
```

# sql

1. %like
2.
3.
4. mysql
5. or or

```
explain SELECT * FROM staff  where address_id = 2 or address_id =1;()
explain SELECT * FROM staff  where address_id = 2 or store_id =1;
()

union all
```

1. !=<>sqlbetween > and <
2. Order by Group by Distinct
3. sql not in not exists <> force index

```
explain SELECT * FROM inventory FORCE index(idx_fk_film_id) where film_id not in (1,2);
 not exists

explain SELECT f2.* FROM inventory f2 where not exists (select 'X' from film f1 where f1.film_id =
f2.film_id);
explain SELECT f2.* FROM inventory f2 where f2.film_id not in (select f1.film_id from film f1 );
```

1.
    - mysql
    - Force index(index_name)
    - innodb
    - ;
    - ;
    - .
    - ;
    - WHERE .

sql

1. join

- MySQL MySQL Join Join Oracle

1.

- CPU IO SQL
- MySQL .

1. select *

- select ?
- IO order by select MySQL ORDER BY

IO IO

1. join

- Join MySQL MySQL

1. or

- where “”MySQL MySQL SQL Storage union all union()“or”

1. union all union

- union union all () CPU union all union

1.

- ()
- SQL Join SQL Join IO IO

1.

- “” where column
- column_name

1. SQL“”SQL

- SQL SQL IO SQL

Order by

MySQL ORDER BY where order by order by order by

insert

INSERT INSERT ()Insert into test values(1,2),(1,3),(1,4)…

LOAD DATA INFILEINSERT20 replace insert ignore

low_priority_updates=1MYSQL.

where

1. where

```
select id from actor where actor_id/60 > 10000;
    :
    Select id from actor where actor_id>600000;
```

1. wheremysql

```
select uid from imid where datediff(create_time,'2011-11-22')=0

    select uid from imid where create_time> ='2011-11-21‘ and create_time<‘2011-11-23’;
```

Join

JOINJoinMySQLJoinSQLJoin DECIMAL INT JoinMySQLSTRING

```
--
ALTER TABLE  `tablexxx` DEFAULT CHARACTER SET utf8 COLLATE utf8_general_ci;
--
ALTER TABLE  `tablexxx` CHANGE  `columnxxx`  `columnxxx` VARCHAR( 100 ) CHARACTER SET utf8 COLLATE
utf8_general_ci NULL DEFAULT NULL
```

Group By

MySQL GROUP BY col1col2....ORDER BY col1col2...ORDER BYMySQL GROUP BY ORDER BY NULL

```
explain select actor.first_name, actor.last_name, count(*) from sakila.film_actor
       inner join sakila.actor USING(actor_id) group by film_actor.actor_id
+----+-------------+------------+------------+------+------------------------+---------+---------+---------
--------------+------+----------+---------------------------------+
| id | select_type | table      | partitions | type | possible_keys          | key     | key_len | ref
| rows | filtered | Extra                           |
+----+-------------+------------+------------+------+------------------------+---------+---------+---------
--------------+------+----------+---------------------------------+
| 1  | SIMPLE      | actor      | NULL       | ALL  | PRIMARY                | NULL    | NULL    | NULL
| 200  | 100.00   | Using temporary; Using filesort |
| 1  | SIMPLE      | film_actor | NULL       | ref  | PRIMARY,idx_fk_film_id | PRIMARY | 2       |
sakila.actor.actor_id | 27   | 100.00   | Using index                     |
+----+-------------+------------+------------+------+------------------------+---------+---------+---------
--------------+------+----------+---------------------------------+


explain select actor.first_name, actor.last_name, c.cnt  from sakila.actor
     inner join (select actor_id, count(*) as cnt from sakila.film_actor  group by actor_id )as c
USING(actor_id)
```

NOT NULL NULL NOT NULL NULL NULLNULL MySQL “NULL columns require additional space in the row to record whether their values are NULL. For MyISAM tables, each NULL column takes one bit extra, rounded up to the nearest byte.”

“” “static” “fixed-length” VARCHARTEXTBLOB“”MySQL MySQL

MySQL Storage Requirements

INT MEDIUMINT, SMALLINT TINYINT DATE DATETIME

ALTER TABLE

1.
2. IDIDCURDORMIDOrderID
3. 2ID
4.
5.
6.
7.

1.
2.
3. +
4.
5. ID + ID+
6. null

1.
2.
3.