SELECT E.emp\_no, E.first\_name, E.last\_name, COUNT(\*)

FROM employees E INNER JOIN salaries S

ON E.emp\_no = S.emp\_no

WHERE S.salary > (SELECT AVG(Sa.salary) from salaries Sa)

GROUP BY E.emp\_no, E.first\_name, E.last\_name

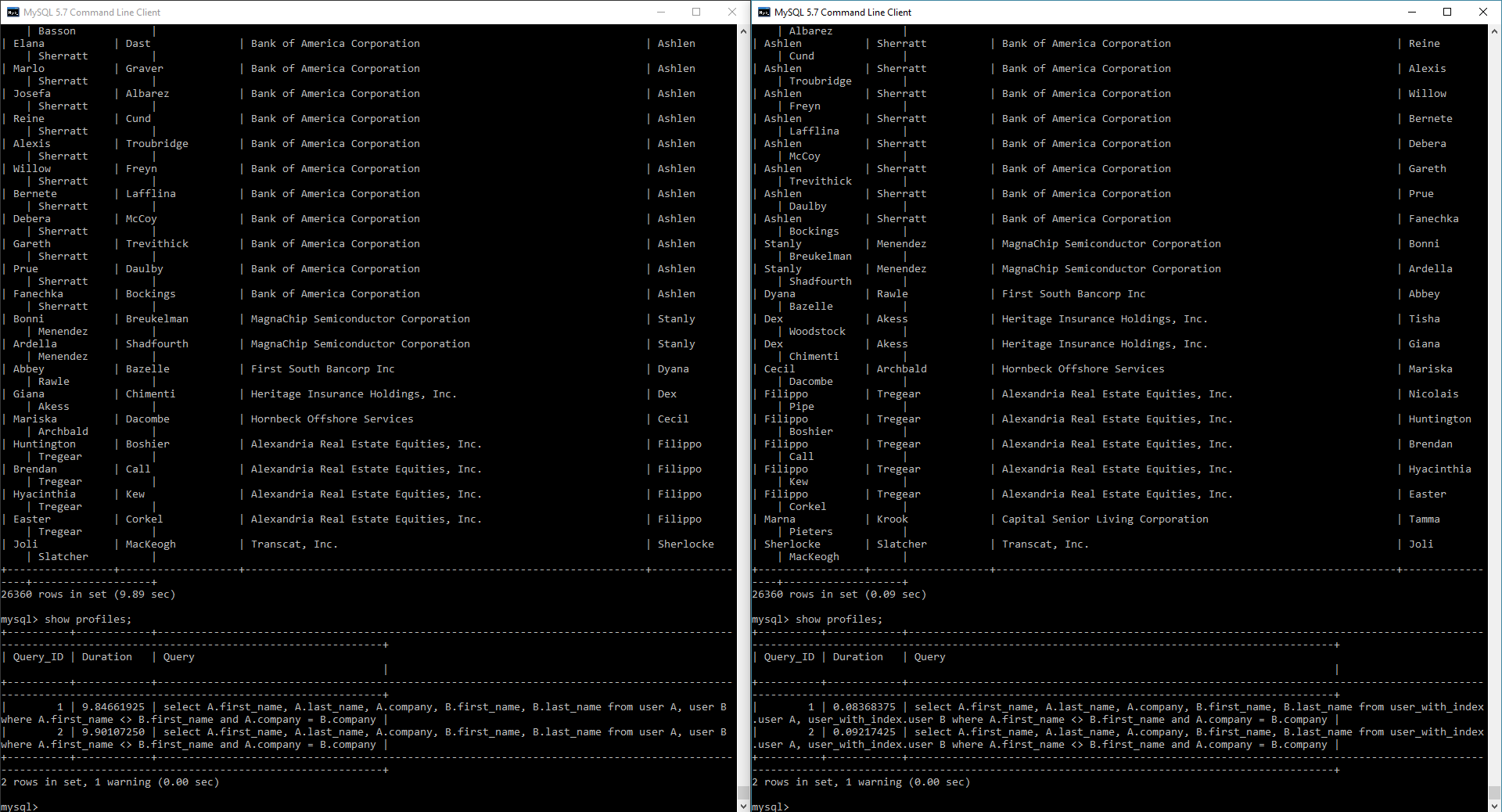
;

**QUERY 1**: SELF-JOIN

People in same company:

select A.first\_name, A.last\_name, A.company, B.first\_name, B.last\_name from user\_no\_index.user A, user\_no\_index.user B where A.first\_name <> B.first\_name and A.company = B.company

select A.first\_name, A.last\_name, A.company, B.first\_name, B.last\_name from user\_with\_index.user A, user\_with\_index.user B where A.first\_name <> B.first\_name and A.company = B.company



**QUERY 2**:

User info with country name

select A.first\_name, A.last\_name, A.company, A.country\_code, B.country from user\_no\_index.user A left outer join user\_no\_index.country B on A.country\_code = B.country\_code order by A.first\_name

select A.first\_name, A.last\_name, A.company, A.country\_code, B.country from user\_with\_index.user A left outer join user\_with\_index.country B on A.country\_code = B.country\_code order by A.first\_name

Company:

CREATE TABLE `company` (

`company` varchar(100) NOT NULL,

`street\_number` varchar(45) NOT NULL,

`street\_name` varchar(45) NOT NULL,

`city` varchar(45) NOT NULL,

`state` varchar(45) NOT NULL,

`country` varchar(45) NOT NULL

) ENGINE=InnoDB DEFAULT CHARSET=utf8;

**QUERY 3:**

Display user’s info with his company details

select A.first\_name, A.last\_name, A.company, B.street\_number, B.street\_name, B.city, B.state, B.country

from user\_no\_index.user A, user\_no\_index.company B

where A.company = B.company

order by A.first\_name

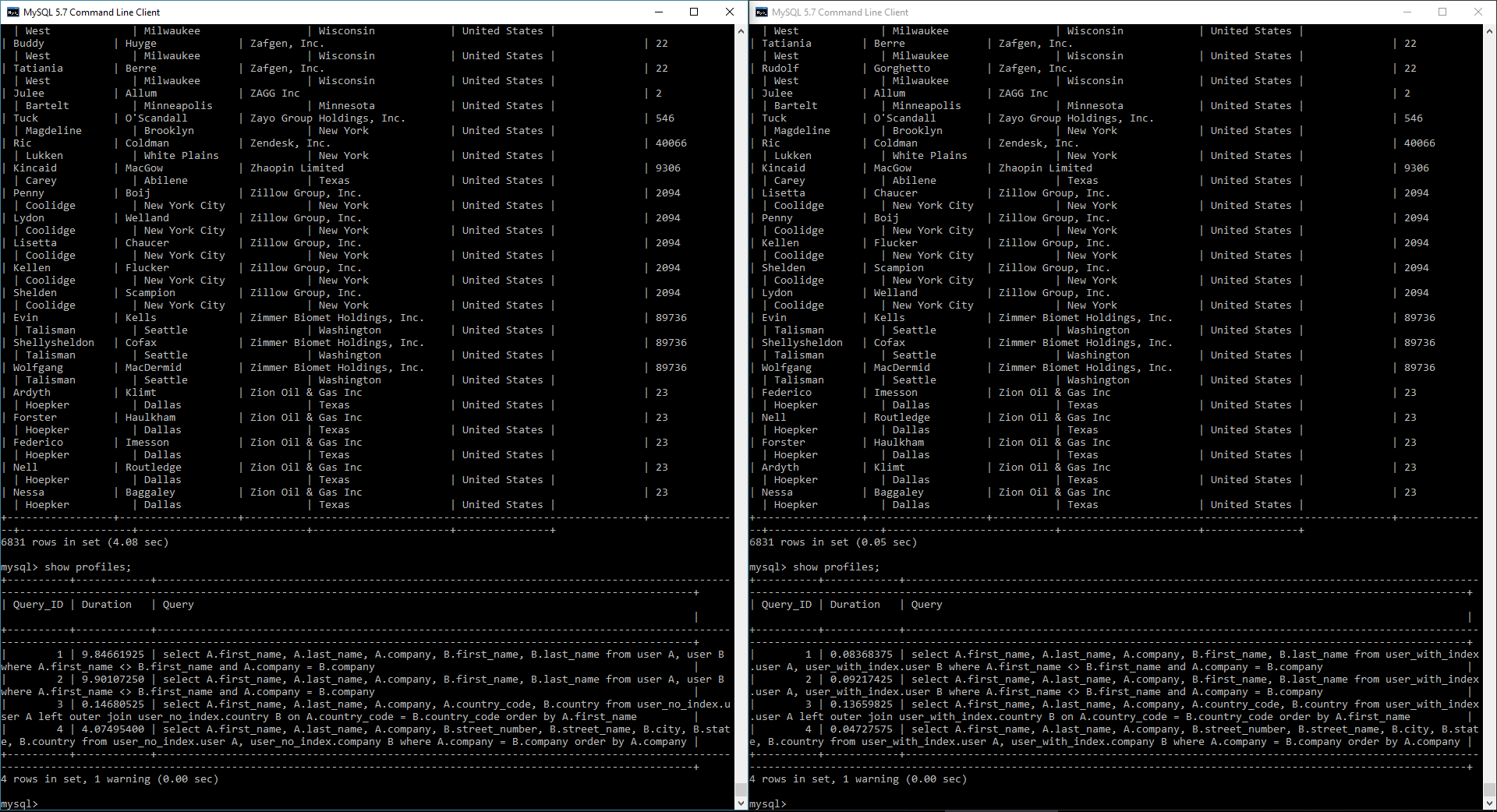
select A.first\_name, A.last\_name, A.company, B.street\_number, B.street\_name, B.city, B.state, B.country

from user\_with\_index.user A, user\_with\_index.company B

where A.company = B.company

order by A.first\_name

index\_company\_1 : company of user\_with\_index.user

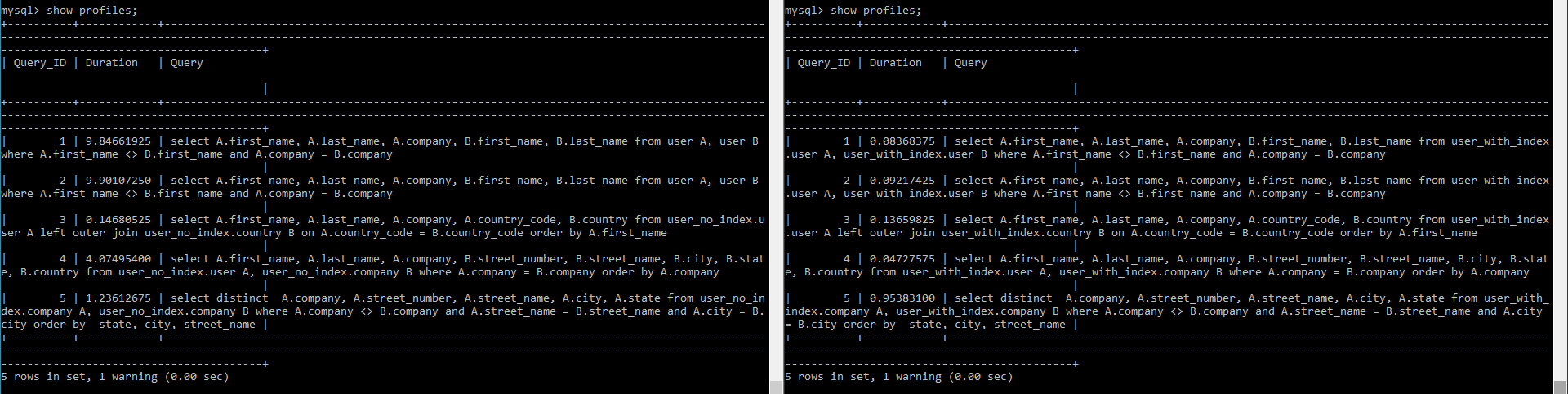


**QUERY 4:**

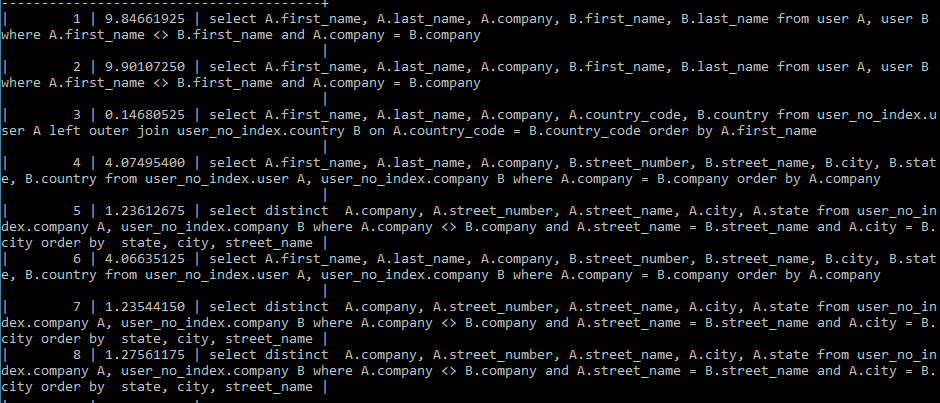
Get all companies which are located on the same street of the city in USA.

select distinct A.company, A.street\_number, A.street\_name, A.city, A.state from user\_no\_index.company A, user\_no\_index.company B where A.company <> B.company and A.street\_name = B.street\_name and A.city = B.city order by state, city, street\_name

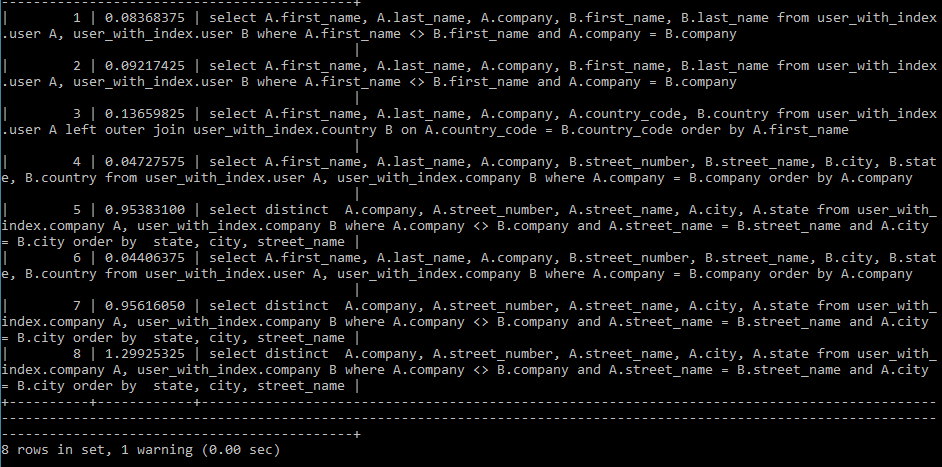
select distinct A.company, A.street\_number, A.street\_name, A.city, A.state from user\_with\_index.company A, user\_with\_index.company B where A.company <> B.company and A.street\_name = B.street\_name and A.city = B.city order by state, city, street\_name



user\_no\_index:



User\_with\_index:



5: index on company, street\_name, city

6: repeated query 3

7: index on company, street\_name

8: index on company only - no performance improvement

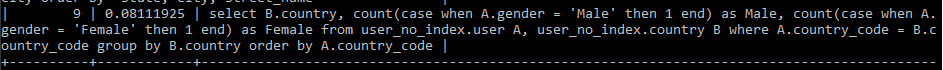
**QUERY 5:**

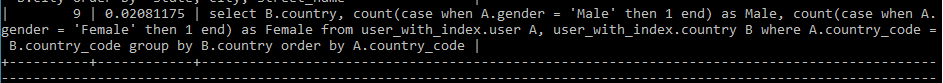
Display Male to Female ratio amongst all employees based on country

select B.country, count(case when A.gender = 'Male' then 1 end) as Male, count(case when A.gender = 'Female' then 1 end) as Female from user\_no\_index.user A, user\_no\_index.country B where A.country\_code = B.country\_code group by B.country order by A.country\_code;

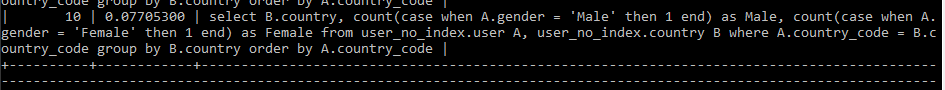
select B.country, count(case when A.gender = 'Male' then 1 end) as Male, count(case when A.gender = 'Female' then 1 end) as Female from user\_with\_index.user A, user\_with\_index.country B where A.country\_code = B.country\_code group by B.country order by A.country\_code;

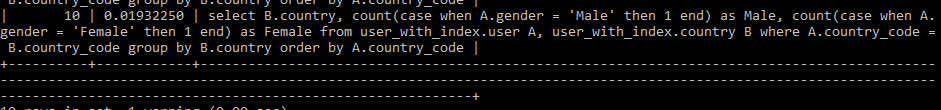
Index on user’s country code





Index on user’s and country’s country code:



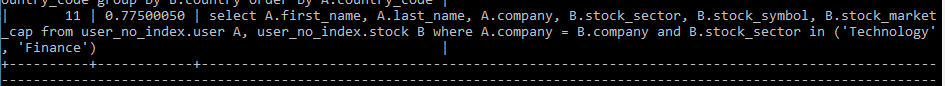


**QUERY 6:**

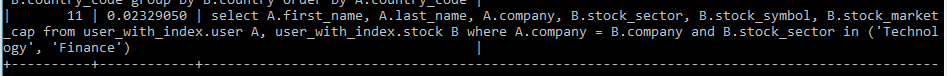
Get all the stock information of user’s company stocks

Index on user’s company

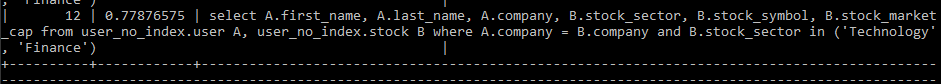
select A.first\_name, A.last\_name, A.company, B.stock\_sector, B.stock\_symbol, B.stock\_market\_cap from user\_no\_index.user A, user\_no\_index.stock B where A.company = B.company and B.stock\_sector in ('Technology', 'Finance');

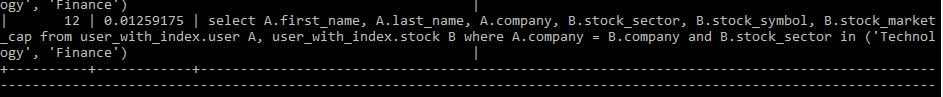


select A.first\_name, A.last\_name, A.company, B.stock\_sector, B.stock\_symbol, B.stock\_market\_cap from user\_with\_index.user A, user\_with\_index.stock B where A.company = B.company and B.stock\_sector in ('Technology', 'Finance');



Index on user’s company and stock’s company





Index on user’s company, stock’s company, stock’s sector

