

12 SQL

Group member:

A0275684M LI FANGZHENG,

A0275594M YANG ENZE,

A0275712A ZHANG HANTIAN,

A0275731B ZHANG YINGDONG,

A0275755N ZHAO WENKANG,

1

Find the name of merchants in NV state with loyal customers (visited by at least 1 customer 5 times or more)

MySQL - 694 rows



```
SELECT b.business_id, b.name
FROM business b
JOIN (
    SELECT business_id, COUNT(DISTINCT user_id) AS user_count
    FROM visit
    GROUP BY business_id, user_id
    HAVING COUNT(user_id) >= 5
) v ON b.business_id = v.business_id
WHERE b.state = 'NV'
GROUP BY b.business_id, b.name
HAVING COUNT(DISTINCT v.user_count) >= 1;
```



business_id	name	state
_0-6uHKoz1tWsKC2bFz1pg	UFC GYM Reno	NV

_3uzefAEsn4bkC00M6lG6g	Angel Pet Sitting	NV	
_8zIpeRbMVwvyuUngyuemA	Cafe De Manila	NV	
_E0WPHfJEYmwOUCAj-Jq1A	Western Village Inn and Casino	NV	
_FDkzPehuIZFHTuDcrJ73g	Ricks Total Car Care	NV	
_HFJ9JkjQTaQwOmvkRoIKg	David's Bridal	NV	
_KlEMZvay1c9xYctKFtN-w	999 Pho	NV	
_Mbw_orl5EdXJP1XzklQvA	Mimi's Cafe	NV	
_NozEKb4y0jkC08DWU8ywA	Golden Flower Vietnamese	NV	
_t5JZRB6-bvtX2XsLMidAg	Asian Wok	NV	
+-----+-----+-----+			

Mongodb - 694 rows

```

db.visit.aggregate([
  {
    $group: {
      _id: { user_id: "$user_id", business_id: "$business_id" },
      visit_count: { $sum: 1 }
    }
  },
  {
    $match: {
      visit_count: { $gte: 5 }
    }
  },
  {
    $group: {
      _id: "$_id.business_id",
      user_count: { $sum: 1 }
    }
  },
  {
    $match: {
      user_count: { $gte: 1 }
    }
  },
  {
    $lookup: {
      from: "business",
      localField: "_id",
      foreignField: "_id",
      as: "business_info"
    }
  }
])

```

```

    },
    {
      $unwind: "$business_info"
    },
    {
      $match: {
        "business_info.state": "NV"
      }
    },
    {
      $project: {
        _id: "$business_info._id",
        name: "$business_info.name"
      }
    }
  ]);

```

▼

```

+-----+-----+
|_id          |name          |
+-----+-----+
|snyvZnLnTpBfyLh2-fw0qQ|Nugget Event Center|
|-e1BUA0Bk9RAu89c6uTyGA|Texas Roadhouse    |
|CpI1Mk0H7mEBW4SedI5LSQ|A Bakery Built for Two|
|UNk0a6syMXonsoTEr12BIg|Costco Wholesale   |
|E1s2QgsWgt13lGEIA_n9VQ|Raley's            |
|0GsYSmfpsUpnTnxYbH045A|Jimboy's Tacos     |
|MptP4Zxq3ZLbeGB4cY772A|Peg's Glorified Ham & Eggs|
|cN2w2eM2BUQ_uJ1CaRKcAQ|Casale's Halfway Club|
|3ucn3_cDf1WV0DsFgoTfyQ|Carolina Kitchen & Barbeque|
|jFn5pbJySxsPk0kaZfw5ig|Taco Bell          |
+-----+-----+

```

Query 1

Find the name of merchants in NV state with loyal customers (visited by at least 1 customer 5 times or more)

Query 2

Query 3

Query 4

Query 5

Query 6

Query 7

Query 8

Query 9

Query 10

Query 11

Query 12

business_id	name
_B-6uHKOz1HWKC2ufzpg	UFC GYM Reno
_3uzsFAEn4dkCO0M6G6g	Angel Pet Sitting
_BzpeRBMVwyoUingyuemA	Cafe De Manila
_EOWPHIEYmwOUCAj-Iq1A	Western Village Inn and Casino
_FDkzPehuzFHTuDetI73g	Ricks Total Car Care
_HFJ9kgq14zQwOmKRoIKg	David's Bridal
_KlEMZvay1c9YctKFIn-w	999 Pho
_Mbw_prfSEdXPIIXkIQvA	Mimi's Cafe
_NzeEK3dyQjC0BDWUdywA	Golden Flower Vietnamese
_t5IZRB6-bvOXZxLMidAg	Asian Wok

1 2 3 4 5

MySQL Query

SELECT b.business_id, b.name FROM business b JOIN (SELECT business_id, COUNT(DISTINCT user_id) AS user_count FROM visit GROUP BY business_id, user_id HAVING COUNT(user_id) >= 5) v ON b.business_id = v.business_id WHERE b.state = 'NV' GROUP BY b.business_id, b.name HAVING COUNT(DISTINCT v.user_count) >= 1;

MySQL Query Time

15.9194258643355469

MySQL Query

694

Number

_id	name
nufIZKwIASx5BTk1dh5AQ	Wendy's
k9AAtAme12LpfrNPkrjg	El Pollo Loco
6exVCuj4S1Hd6bb0C_Bg	Delicious Designs
0qd3JaAochXBDqE78Y1LMw	Washoe County Regional Animal Services
SWwa3M-QfDq53W7Ckunhw	Reno Tahoe Rustic Modern
qq4Zc5y76vCxCQy4CLfA	The Casino Grill
HF7-FTR0NXQzh_gpQ3oA	Empire Diner
ZYBVxKXDJ285V4G-hgpaw	Jiffy Lube
jz16fw5FcG4eTjJML-F7Ow	Chapel Tavern
2ahgDy3bmndgRo0aGrfIEQ	Wink Lash Studio + Bath Bar

1 2 3 4 5

MongoDB Query

db.visit.aggregate([{\$group: {\$_id: {user_id: '\$user_id', business_id: '\$business_id'}, visit_count: { \$sum: 1 }}}, {\$match: {visit_count: { \$gte: 5 }}}, {\$group: {\$_id: {'\$business_id', user_count: { \$sum: 1 }}}, {\$match: {user_count: { \$gte: 1 }}}, {\$lookup: {from: 'business', localField: '_id', foreignField: '_id', as: 'business_info'}}, {\$unwind: {'business_info'}, {\$match: {'business_info.state': 'NV'}}, {\$project: {\$_id: {'\$business_info._id', name: '\$business_info.name'}}}]);

MongoDB Query

68.253005027771

Time

MongoDB Query

694

2

Find out the category of merchants with the largest number as well as all the merchant with 5 stars under this category.

MySQL - 1553 rows

▼

WITH CategoryCounts AS (

SELECT

c.category,

b.business_id,

b.name,

COUNT(b.business_id) OVER (PARTITION BY c.category) AS business_count

FROM

business_category c

LEFT JOIN

business b ON c.business_id = b.business_id

)

SELECT

category,

business_id,

name

FROM

CategoryCounts

4 / 43

```

WHERE
    business_count = (
        SELECT
            MAX(business_count)
        FROM
            CategoryCounts
    )
AND business_id IN(
    SELECT business_id
    FROM business
    WHERE stars = 5
);

```

▼

```

+-----+-----+-----+
|category|business_id|name|
+-----+-----+-----+
|Restaurants|_4gkf_0UJW78rkRzFm6Gw|Cafe Baladi|
|Restaurants|_58WfMGlrnPossd2Gps6g|Black Radish Grocer|
|Restaurants|_7X0f9VLowKqH-wtrWwTuw|CD Roma's|
|Restaurants|_8QkK3WwGxNnn54Q1VTTcA|Leneghan's Crusader Inn|
|Restaurants|_aKr7POnacW_VizRKBpCiA|Blues City Deli|
|Restaurants|_dyh3uCE6E4TimbtFiB-ag|10 & 10 Enoteca|
|Restaurants|_e9NcunDgXR1dp1XbP2Mbg|Shineworthy Tea|
|Restaurants|_EWIACznqBcCLon_MBf47Q|The Wagamama|
|Restaurants|_FUE9ZOqNTiDmgP2LGPgDw|Dolores|
|Restaurants|_heLm-iFJJbw4ZAH_Z1iLQ|Peter James BYOB|
+-----+-----+-----+

```

MongoDB - 1553 rows

▼

```

db.business.aggregate([
  {
    $unwind: "$categories"
  },
  {
    $group: {
      _id: "$categories",
      business_count: { $sum: 1 },
      businesses: {

```

```

        $push: {
            business_id: "$_id",
            name: "$name",
            stars: "$stars"
        }
    }
},
{
    $sort: { "business_count": -1 }
},
{
    $limit: 1
},
{
    $unwind: "$businesses"
},
{
    $match: {
        "businesses.stars": 5
    }
},
{
    $project: {
        _id: 0,
        category: "$_id",
        business_id: "$businesses.business_id",
        name: "$businesses.name"
    }
}
])

```

▼

business_id	category	name
ABxoFuzZy5mqQ8C5FJJajQ	Restaurants	Core de Roma
cVBxfMC4lp3DnocjYA3FHQ	Restaurants	Paws The Cat Cafe
RK6-cJ9hj53Rz0LCBmpT-g	Restaurants	Impasto
tSFXJ0GF15iUdy021YgWLw	Restaurants	The Mad Griddle
1dSKEitDDgIkaApe6UNMSA	Restaurants	The Pepper Pott
Rz0KfP7YAZV_yQE8uIB0fg	Restaurants	El Sabor Boricua
adATTqggIQX5xxLDISkFTw	Restaurants	Just Churros

```
|mYbEGFsRcA0tfUNSYcBJMA|Restaurants|Golden River Restaurant |
|yX-eHIG--H3geTNWZ2Q6SA|Restaurants|Crush Gourmet Raspados  |
|_Oksx3ALgKLRVxeAR81_qA|Restaurants|V-Trap Kitchen and Lounge|
+-----+-----+-----+
```

Query 1
Query 2
Query 3
Query 4
Query 5
Query 6
Query 7
Query 8
Query 9
Query 10
Query 11
Query 12

Find out the category of merchants with the largest number as well as all the merchant with 5 stars under this category.

business_id	category	name
_4pH_dUW7B8fzm6Gw	Restaurants	Cafe Baladi
_5BWMGmmPssdZ5p6q	Restaurants	Black Radish Grocer
_7X09VLowKqH-vnWwTuu	Restaurants	CD Roma's
_8QKdWwGdhwS4Q1V7SA	Restaurants	Lemeghen's Crusader Inn
_aU7P0ncW_VdRk3pCIA	Restaurants	Blues City Deli
_dyh3uCE64TmbdFIB-ag	Restaurants	10 & 10 Enoteca
_e9NcunGp8Ldp13pZ2M8g	Restaurants	Shineworthy Tea
_EWkAczm8cCCon_MBH4TQ	Restaurants	The Wagamama
_FUEZQqNTQmpP2LGP6Gw	Restaurants	Dolores
_JelLm-f3lhw4ZAH_Z1LlQ	Restaurants	Peter James BYOB

```
MySQL Query
WITH CategoryCounts AS (SELECT c.category, b.business_id, b.name, COUNT(b.business_id) OVER (PARTITION BY c.category) AS
business_count FROM business_category c LEFT JOIN business b ON c.business_id = b.business_id) SELECT category, business_id, name
FROM CategoryCounts WHERE business_count = (SELECT MAX(business_count) FROM CategoryCounts) AND business_id IN (SELECT business_id
FROM business WHERE stars = 5);
```

MySQL Query Time: 7.491585152033033

MySQL Query: 1553

Number

business_id	category	name
ABsofuzZ5mqQ8C5fJiaQ	Restaurants	Core de Roma
cV8vMCM4pIDnooVA3fHQ	Restaurants	Pais The Cat Cafe
R6S-cJ9p5JRa2C8CmpT-g	Restaurants	Impasto
15FXJ05H53dyQ2YigWUw	Restaurants	The Mad Griddle
1u5XEDDgkuaApeSUNMSA	Restaurants	The Pepper Pott
Rz0K7YVAZV_yG8uB0Bg	Restaurants	El Sabor Boricua
u6MTTogpQD5oLd5fM7w	Restaurants	Just Churros
mV8EGf8uA2tUNSYcBJMA	Restaurants	Golden River Restaurant
yX-eHIG--H3geTNWZ2Q6SA	Restaurants	Crush Gourmet Raspados
_Oksx3ALgKLRVxeAR81_qA	Restaurants	V-Trap Kitchen and Lounge

```
MongoDB Query
db.business.aggregate([
  $business.aggregate([
    $group: {
      _id: "$category",
      business_count: { $sum: 1 },
      stars: { $avg: "$stars" }
    },
    $sort: {
      business_count: -1
    },
    $limit: 1
  ]),
  $project: {
    _id: 0,
    category: "$_id",
    business_id: "$business.business_id",
    name: "$business.name"
  }
])
```

MongoDB Query: 1.745999813079834

Time

MongoDB Query: 1553

Number

3.

Find out which stores in city: Santa Barbara with a star rating greater than 3.5 have an average star rating greater than the merchant's star rating in reviews after January 1, 2020 at 0:00 pm.

MySQL - 376 rows

```
SELECT
  b.name,
  b.address as address,
  b.city,
  b.state,
  b.stars AS stars,
  AVG(r.stars) AS avg_stars
FROM
  business b
```

```

JOIN
    review r ON r.business_id = b.business_id
WHERE
    r.date > '2020-01-01T00:00:00'
GROUP BY
    b.business_id, b.stars,b.city
HAVING
    AVG(r.stars) > b.stars
AND
    b.city = 'Santa Barbara'
AND
    b.stars > 4;

```

▼

+-----+-----+				
name		address		city
state	stars	avg_stars		
+-----+-----+				
Laplace Wine Bar & Shop		205 Santa Barbara St, Unit B		Santa Barbara CA
4.5	4.6667			
Dave's Dogs Grill		149 S Turnpike Rd		Santa Barbara CA
4.5	4.5251			
Wine + Beer		38 W Victoria St, Shop 113		Santa Barbara CA
4.5	4.5500			
Cloud Climbers Jeep Tours		null		Santa Barbara CA
4.5	4.6846			
Lara's Auto Repair		619 E Gutierrez St, Ste D		Santa Barbara CA
4.5	4.5682			
UCSB Faculty Club Guest Rooms		552 University Rd		Santa Barbara CA
4.5	4.6667			
Isabella Gourmet Foods		602 Anacapa St		Santa Barbara CA
4.5	4.7059			
Alameda Park		1400 Santa Barbara St		Santa Barbara CA
4.5	4.6212			
Above All Aviation		1503 Cook Pl		Santa Barbara CA
4.5	4.9000			
Apna Indian Kitchen		718 State St		Santa Barbara CA
4.5	4.6118			
+-----+-----+				
+-----+-----+				

MongoDB - 376 rows

▼

```
db.business.createIndex({ stars: 1, city: 1 });
db.review.createIndex({ business_id: 1 });
db.business.aggregate([
  {
    $match: {
      city: 'Santa Barbara',
      stars: { $gt: 4 },
    },
  },
  {
    $lookup: {
      from: 'review',
      localField: '_id',
      foreignField: 'business_id',
      as: 'reviews',
    },
  },
  {
    $addFields: {
      filteredReviews: {
        $filter: {
          input: '$reviews',
          as: 'review',
          cond: {
            $gt: ['$review.date', new Date('2020-01-01T00:00:00')],
          },
        },
      },
    },
  },
  {
    $addFields: {
      avgBusinessStars: {
        $avg: '$filteredReviews.stars',
      },
    },
  },
  {
    $match: {
      $expr: {
        $gt: ['$avgBusinessStars', '$stars'],
      },
    },
  },
])
```

```

    },
  },
},
{
  $project: {
    name: 1,
    address: 1,
    city: 1,
    state: 1,
    stars: 1,
    avgBusinessStars: 1,
    // filteredReviews: 1,
    _id: 0,
  },
},
]);

```

▼

+-----+-----+-----+-----+			
-----+-----+-----+			
address	avgBusinessStars	city	name
stars state			
+-----+-----+-----+-----+			
825 Cacique St	4.7	Santa Barbara	Iron Horse Auto Body
4.5 CA			
San Marcos Pass Rd	5	Santa Barbara	Los Padres National
Forest 4.5 CA			
712 Nopalitos Way	4.5555555555555555	Santa Barbara	Granny's Garage
4.5 CA			
4133 San Martin Way	5	Santa Barbara	Dodo Limo &
Transportation 4.5 CA			
120 Santa Barbara St	4.8	Santa Barbara	Topa Topa Brewing
Company 4.5 CA			
1298 Las Positas Rd	4.6	Santa Barbara	Elings Park
4.5 CA			
900 N Milpas St, Ste B	5	Santa Barbara	Slanging Ink
4.5 CA			
1103 State St	5	Santa Barbara	Hempwise
4.5 CA			
22 Anacapa St	5	Santa Barbara	Muller Aquatic Center
4.5 CA			

|227 N Nopal St |5 |Santa Barbara|Our Lady of Guadalupe
Mercado|4.5 |CA |

+-----+-----+-----+-----+
-----+-----+-----+

Query 1	Find out which stores in city: Santa Barbara with a star rating greater than 3.5 have an average star rating greater than the merchant's star rating in reviews after January 1, 2020 at 0:00 pm.
Query 2	
Query 3	
Query 4	
Query 5	
Query 6	
Query 7	
Query 8	
Query 9	
Query 10	
Query 11	
Query 12	

address	avg_stars	city	name	stars	state
129 N Milpas St	4.5714	Santa Barbara	Classic Design	4.5	CA
401 S Hope Ave, Ste D	5.0000	Santa Barbara	Acura Santa Barbara	4.5	CA
1316 State St	4.6389	Santa Barbara	Café Coffee - Arlington St	4.5	CA
3514 State St	4.5248	Santa Barbara	SB Sunshine Cafe	4.5	CA
2234 De La Vina St	5.0000	Santa Barbara	Pedro's Smog Check	4.5	CA
307 E Guierrez St	5.0000	Santa Barbara	Bob Jarrett Range Rover & Aston Martin Service	4.5	CA
1305 State St	4.6286	Santa Barbara	Teru Japanese Cuisine	4.5	CA
604 Santa Barbara St	4.8000	Santa Barbara	Recipes Bakery & Gifts: An Australian Coffee House	4.5	CA
1150 Coast Village Rd	4.7500	Santa Barbara	Montecito Deli & Catering	4.5	CA
519 State St	4.8000	Santa Barbara	The Red Piano	4.5	CA

address	avgBusinessStars	city	name	stars	state
1 N Calle Cesar Chavez, Ste 9	5	Santa Barbara	Bella Vista Designs	4.5	CA
1431 San Andres St	4.714285714285714	Santa Barbara	The Tully	4.5	CA
1100 Anacapa St	4.8	Santa Barbara	Santa Barbara County Courthouse	4.5	CA
125 State St	4.8	Santa Barbara	MOJO - The Wolf Museum Of Exploration + Innovation	4.5	CA
519 State St	4.8	Santa Barbara	The Red Piano	4.5	CA
3463 State St, Unit 505	5	Santa Barbara	Santa Barbara Healing & Air	4.5	CA
819 Anacapa St	5	Santa Barbara	Intermezzo By Wine Cask	4.5	CA
504 W Pueblo St, Ste 303	5	Santa Barbara	Lisa Rader, NP - Women's Medical Clinic	4.5	CA
721 Ecabrillo Blvd	4.7	Santa Barbara	Chromatic Gate	4.5	CA
535 State St	5	Santa Barbara	Lovebird Boutique & Jewelry Bar	4.5	CA

MySQL Query Time: 27.968833446502686

MySQL Query: 376

MongoDB Query Time: 4.56226921081543

MongoDB Query: 376

4

Find out who John's friends are. Find the people who go shopping more often than him.

MySQL - 4650 rows



```
select A.friend_name, A.friendVisitCount
from (SELECT
#      u.user_id                AS user_id,
#      u.name                   AS user_name,
#      COUNT(DISTINCT v1.business_id) AS johnVisitCount,
#      f.friend_id,
#      u2.name                  AS friend_name,
#      COUNT(DISTINCT v2.business_id) AS friendVisitCount
FROM user u
      JOIN
      friend f ON u.user_id = f.user_id
      JOIN
```

```

user u2 ON f.friend_id = u2.user_id
      JOIN
visit v1 ON v1.user_id = u.user_id
      JOIN
business_category bc1 ON bc1.business_id = v1.business_id
      JOIN
visit v2 ON v2.user_id = f.friend_id
      JOIN
business_category bc2 ON bc2.business_id = v2.business_id
WHERE u.name = 'John'
      AND bc1.category = 'Shopping'
      AND bc2.category = 'Shopping'
GROUP BY u.user_id, u.name, f.friend_id, u2.name
HAVING johnVisitCount < friendVisitCount) as A;

```

▼

```

+-----+-----+-----+-----+-----+
----+-----+
|user_id          |user_name|johnVisitCount|friend_id
|friend_name|friendVisitCount|
+-----+-----+-----+-----+-----+
----+-----+
|_5MB3xn7UyBJ1zV9IwAREw|John      |1          |3cMHSBbJdHuazh8XN8qJPA|A
|4                      |          |
|_5MB3xn7UyBJ1zV9IwAREw|John      |1          |QWKPQiqH_o_ARgp1dmB1CQ|Anne
|4                      |          |
|_5MB3xn7UyBJ1zV9IwAREw|John      |1          |z_hxX-PtqyNtiM9aKaeBTQ|Nasha
|3                      |          |
|_ahCp1VkqBjAGm1a0IXb9w|John      |1          |TYwQtORbORzcX22xdYBx1g|Brian
|39                     |          |
|_dHP6IeEGKXCTxXHjmovzQ|John      |2          |4BUDG3wEofTByb125aFcXQ|Amber
|15                     |          |
|_dHP6IeEGKXCTxXHjmovzQ|John      |2          |5k0DeaS7wZRtbUm6uWIyGA|Torri
|6                      |          |
|_dHP6IeEGKXCTxXHjmovzQ|John      |2          |6Jrx4sEzyYLz4XWAMVokgw|Ian
|30                     |          | |
|_dHP6IeEGKXCTxXHjmovzQ|John      |2          |
|A9cXP_K95FRor1qxuUEu2g|Richard   |75         |
|_dHP6IeEGKXCTxXHjmovzQ|John      |2          |AVyU4MC9ucdgCFRaLNpePQ|Sarah
|41                     |          |
|_dHP6IeEGKXCTxXHjmovzQ|John      |2          |mOchgrEMUw304wyFxiMAJg|Shelly
|5                      |          |

```

+-----+-----+-----+-----+-----+
----+-----+-----+-----+-----+-----+

MongoDB - 4650 rows



```
db.business.createIndex({ business_id: 1 });
db.user.createIndex({ friends: 1 });
db.visit.createIndex({ user_id: 1 });
db.visit.createIndex({ business_id: 1 });
db.user.createIndex({ name: 1 });

db.user.aggregate([
  { $match: { name: "John" } },
  {
    $lookup: {
      from: "visit",
      localField: "_id",
      foreignField: "user_id",
      as: "userVisit",
    },
  },
  {
    $lookup: {
      from: "business",
      localField: "userVisit.business_id",
      foreignField: "_id",
      as: "businessUser",
    },
  },
  {
    $match: {
      businessUser: {
        $elemMatch: {
          categories: "Shopping"
        }
      }
    },
  },
  { $addFields: { userShoppingCount: { $size: "$businessUser" } } },
  { $unwind: "$friends" },
  {
    $lookup: {
```

```

        from: "visit",
        localField: "friends",
        foreignField: "user_id",
        as: "userFriendVisit",
    },
},
///beginbeginbegin
{
    $lookup:{
        from: "business",
        localField: "userFriendVisit.business_id",
        foreignField: "_id",
        as: "businessUserFriend",
    }
},

{
    $match: {
        businessUserFriend: {
            $elemMatch: {
                categories: "Shopping"
            }
        }
    }
},

{ $addFields: { userFriendShoppingCount: { $size: "$businessUserFriend" } } },
//////////eneneeenenenenend
{ $lookup: { from: "user", localField: "friends", foreignField: "_id", as:
"friendInfo" } },
{ $unwind: "$friendInfo" },
{
    $match: {
        $expr: {
            $gt: ["$userFriendShoppingCount", "$userShoppingCount"]
        }
    }
},
{
    $project: {
        _id: 0,
        user_name: "$friendInfo.name", //
//        yelping_since: "$yelping_since", //
        review_count: "$review_count"
    }
}

```

```
}
}
});
```



review_count	user_name
2	caylee
2	Jasmin
2	Victoria
2	Yuri
2	Samantha
2	Phil
2	Samson
13	Matt
1	Bryan
1	Susan

Query 1
Query 2
Query 3
Query 4
Query 5
Query 6
Query 7
Query 8
Query 9
Query 10
Query 11
Query 12

Find out who John's friends are. Find the people who go shopping more often than him.

review_count	user_name
4	A
4	Anne
3	Nash
38	Brian
15	Archer
6	Tom
30	Ken
75	Richard
40	Sarah
5	Shelly

```

select a.friend_name, a.friend_review_count from (select a.user_id as user_id, a.name as user_name, (select count(*) as friend_review_count from friend_review where user_id = a.user_id) as friend_review_count, a.friend_name, a.friend_review_count from friend_review where user_id = a.user_id) a, (select a.user_id as user_id, a.name as user_name, (select count(*) as review_count from review where user_id = a.user_id) as review_count, a.review_count from review where user_id = a.user_id) b where a.friend_review_count > b.review_count and a.name < b.name

```

MongoDB Query Time: 2012-08-08 10:10:14

MongoDB Query: 4000

Number: 1

review_count	user_name
109	Daniel
71	Michael
71	Steven
71	Shel
71	Mark
71	Sam
71	Nicole
71	Alison
122	Heather
122	Dave

```

select a.friend_name, a.friend_review_count from (select a.user_id as user_id, a.name as user_name, (select count(*) as friend_review_count from friend_review where user_id = a.user_id) as friend_review_count, a.friend_name, a.friend_review_count from friend_review where user_id = a.user_id) a, (select a.user_id as user_id, a.name as user_name, (select count(*) as review_count from review where user_id = a.user_id) as review_count, a.review_count from review where user_id = a.user_id) b where a.friend_review_count > b.review_count and a.name < b.name

```

MongoDB Query Time: 2012-08-08 10:10:14

MongoDB Query: 4000

Number: 1

The "Influence Score" is generated from the sum of the 11 attributes of the user's COMPLIMENT plus 100 times the user's ELITE number of years, listing the 20 users with the highest scores.

MySQL - 20 rows

▼

```
SELECT user_id, (compliment_hot + compliment_more + compliment_profile +
compliment_cute + compliment_list + compliment_note + compliment_plain +
compliment_cool + compliment_funny + compliment_writer + compliment_photos +
100 * elite_count) AS influence_score
FROM compliment
NATURAL JOIN
  (SELECT user_id, COUNT(elite_year) AS elite_count
   FROM user
   LEFT JOIN
     user_elite
   USING (user_id)
   GROUP BY user_id) AS A
ORDER BY influence_score DESC
LIMIT 20;
```

▼

user_id	influence_score
__6aix-XvFcQz3GauAPpw 0	
__9Jl-8aF7z58JdTWlyjw 1	
__a04EhZULBsJPvJ4rMhA 0	
__DjEwDb9e7Ny-N0iezZw 0	
__hQj63mwgFDhehNwv3ZQ 1	
__I9ZYdYGkZ6dMYxwJEIQ 37	
__Pu1-1cE0y9hjAer8GrQ 0	
__tX0MgAQYPaWssEjSxKw 0	
__--6h87PZRkaT0SAuQc-w 0	
__-2EyiraNzLPrq6o1QDIA 0	

MongoDB - 20 rows

▼


```

db.user.aggregate([
  {
    $addFields: {
      influence_score: {
        $sum: [
          "$compliment_hot",
          "$compliment_more",
          "$compliment_profile",
          "$compliment_cute",
          "$compliment_list",
          "$compliment_note",
          "$compliment_plain",
          "$compliment_cool",
          "$compliment_funny",
          "$compliment_writer",
          "$compliment_photos",
          {$multiply: [{ $size: "$elite" }, 100]}
        ]
      }
    }
  },
  {
    $project: {
      _id: 1,
      influence_score: 1
    }
  },
  {
    $sort:{
      influence_score: -1
    }
  },
  {
    $limit: 20
  }
]);

```

▼

```

+-----+-----+
|_id          |influence_score|
+-----+-----+
|qVc80DYU5SZjKXVBgXdI7w|2973          |
|j14WgRoU_-2ZE1aw1dXrJg|22031          |

```

```
| 2WnXYQFK0hXEoTxPtV2zvq | 1085 |
| SZDeASXq7o05mMNLshsdIA | 436 |
| hA5lMy - EnncsH4JoR - hFGQ | 104 |
| q_QQ5kBBw1CcbL1s4NVK3g | 16607 |
| cxuxXkcihfCbqt5Byrup8Q | 101 |
| E9kcWJdJUHUTKfQurPljwA | 156 |
| l01iq - f75hnPNZkTy3Zerg | 126 |
| AUl8MPWJ0mLkMfwbui27lg | 113 |
+-----+-----+
```

Query 1
Query 2
Query 3
Query 4
Query 5
Query 6
Query 7
Query 8
Query 9
Query 10
Query 11
Query 12

The "Influence Score" is generated from the sum of the 11 attributes of the user's COMPLIMENT plus 100 times the user's ELITE number of years, listing the 20 users with the highest scores.

influence_score	user_id
325428	jXuiu1_ONzDKYVHN0aw
277314	Tqm7Wu7IB1td3Ab5ZpUhw
155151	ax7SoXOTipatbsmqHqVow
134251	--2vR0DkmQ6WfcSxKWigw
132932	h4oCQdnfjEHbygEJDsFbg
122240	NOUfyW-BAo_-Cbfo8edew
100494	Gpx8lUd77vQ5qXRuc0tg
88963	JRAy4P4op3PCISZaMRA9_w
88236	gIhqvH8EC62H5WboZ08w
88071	HH7iWw6qV-20IA7JSRWQ

1 2

MySQL Query

```
SELECT user_id (compliment_hot + compliment_score + compliment_profile + compliment_cute +
compliment_list + compliment_note + compliment_plain + compliment_cool + compliment_funny +
compliment_writer + compliment_photos + 100 * elite_count) AS influence_score FROM compliment
BATCHES JOIN (SELECT user_id, COUNT(elite_years) AS elite_count FROM user_elite
USING (user_id) GROUP BY user_id) AS A ORDER BY influence_score DESC LIMIT 20;
```

MySQL Query Time

21.690170764923096

MySQL Query

20

_id	influence_score
jXuiu1_ONzDKYVHN0aw	325428
Tqm7Wu7IB1td3Ab5ZpUhw	277314
ax7SoXOTipatbsmqHqVow	155151
--2vR0DkmQ6WfcSxKWigw	134251
h4oCQdnfjEHbygEJDsFbg	132932
NOUfyW-BAo_-Cbfo8edew	122240
Gpx8lUd77vQ5qXRuc0tg	100494
JRAy4P4op3PCISZaMRA9_w	88963
gIhqvH8EC62H5WboZ08w	88236
HH7iWw6qV-20IA7JSRWQ	88071

1 2

MongoDB Query

```
db.user.aggregate([{$addFields: {influence_score: {$sum:
[ '$compliment_hot', '$compliment_score', '$compliment_profile', '$compliment_cute', '$compliment_list',
'$compliment_note', '$compliment_plain', '$compliment_cool', '$compliment_funny', '$compliment_writer',
'$compliment_photos', {$multiply: [ '$elite_years', 100 ] ] } } } }], {$sort: {influence_score: -1}}, {$limit: 20}]
```

MongoDB Query

15.821245670318604

Time

MongoDB Query

20

6

Find all the businesses that had more check-in numbers in 2020 than in 2019.

MySQL - 17289 rows



```
SELECT business_id, name
FROM business
WHERE business_id IN (SELECT B.business_id
FROM (SELECT business_id, COUNT(date) AS cnt
FROM checkin
WHERE YEAR(date) = 2019
GROUP BY business_id) AS A
RIGHT JOIN
```

```
(SELECT business_id, COUNT(date) AS cnt
FROM checkin
WHERE YEAR(date) = 2020
GROUP BY business_id) AS B
ON A.business_id = B.business_id
WHERE A.cnt IS NULL OR A.cnt < B.cnt);
```

▼

business_id	name
__YGMQexDIqJKtYynxh5gg	Lou
_-8TAMmIbDGkZCXAqSkFMg	Slack's Hoagie Shack
_-ag9LGr0JkJW3bXmtAv-w	Walgreens
_-XYJgVGrNMtn_S6nPm-GQ	Vinnie's Italian Beef and Gyros
_04zRVBKs7Cqsc3TWf-KRg	Muva's Kitchen
_07RALXKTWFO1hooTQ57gg	Allen's Kennel
_0RfzLMX2eou1E24i1Vr2g	A Foam & Fabric Place
_0RHG6h4-GKMTg7NCyYOKQ	Woof Gang Bakery & Grooming Carrollwood
_0yC3ZPvPu_bV-zzSYtBdQ	Planet Beach - Kenner
_10m_xRpfqqnj9jvUUIqjA	Applebee's Grill + Bar

MongoDB - 17289 rows

▼

```
db.business.aggregate([
  {
    $addFields: {
      count_2019: {
        $size: {
          $filter: {

            input: { $ifNull: ["$checkin_date", [ ]] },

            as: "date",
            cond: { $eq: [{ $year: "$$date" }, 2019] }
          }
        }
      },
      count_2020: {
```

```

    $size: {
      $filter: {

        input: { $ifNull: ["$checkin_date", [ ]] },

        as: "date",
        cond: { $eq: [{ $year: "$$date" }, 2020] }
      }
    }
  },
  {
    $match: {
      $expr: {
        $gt: ["$count_2020", "$count_2019"]
      }
    }
  },
  {
    $project: {
      name: 1
    }
  }
])

```

▼

_id	name
MTSW4McQd7CbVtyjqoe9mw	St Honore Pastries
mWMc6_wTdE0EUBKIGXDvFA	Perkiomen Valley Brewery
CF33F8-E6oudUQ46HnavjQ	Sonic Drive-In
bBDDEgkFA10tx9Lfe7BZUQ	Sonic Drive-In
mGFsPRHdE6SMV1gYQ6GzgQ	T-Mobile
ljxNT9p0y7YMPx0fcNBGig	Tony's Restaurant & 3rd Street Cafe
0qNpTGTcqPwOLi2hADx4Xw	Charlie's Market
8rb-3VYXE37IZix4yOdskw	Sharky's Sports Bar & Grill
mFTaYsRDyeFaY2NDLfSaAA	River City Games
-ZXYcCyDjj1QimnJyGtYtg	Gilley's Antique Mall

Query 1
Query 2
Query 3
Query 4
Query 5
Query 6
Query 7
Query 8
Query 9
Query 10
Query 11
Query 12

Find all the businesses that had more check-in numbers in 2020 than in 2019.

business_id	name
_YGMQexDlqKYynh5gg	Lou
..8TAMmbDGZCXaQsKfMg	Slack's Hoagie Shack
..ag9LGrOikW3bXmtAv-w	Walgreens
..XYigVGrNMtn_S6nPrm-GQ	Vinnie's Italian Beef and Gyros
..04eRVBk7Cqsc3TWf-KRg	Muva' s Kitchen
..07RALXXtwFO1hooTQ57gg	Allen's Kennel
..0RfzLMQ2eou1E241Vw2g	A Foam & Fabric Place
..0RH56h4-GKM1g7NCyYOKQ	Woof Gang Bakery & Grooming Carrollwood
..0yC3ZPhPu_hV-zz5YBdQ	Planet Beach - Kenner
..10m_xRqlqq9yVUUIqA	Applebee's Grill + Bar

MySQL Query

```

SELECT business_id, name FROM business WHERE business_id IN (SELECT A.business_id FROM
(SELECT business_id, COUNT(date) AS cnt FROM checkin WHERE YEAR(date) = 2019 GROUP BY
business_id) AS A LEFT JOIN (SELECT business_id, COUNT(date) AS cnt FROM checkin WHERE
YEAR(date) = 2020 GROUP BY business_id) AS B ON A.business_id = B.business_id WHERE A.cnt <
B.cnt);

```

MySQL Query Time: 476.8757119178772
MySQL Query: 17289
Number

_id	name
MT5W4McQz7CLVbyjpe9mw	St Honore Pastries
mWM6d_wTdeOEUBKGDVfA	Perkiomen Valley Brewery
CF3F8-E6oudJQ46InaxjQ	Sonic Drive-In
b8DDegkFA1Ox9Lf678ZUQ	Sonic Drive-In
mGf4PRHdE6SMV1gYQ6GagQ	T-Mobile
lpNT9p9yZYMPd0fNBGig	Tony's Restaurant & 3rd Street Cafe
0qNpTGicqPwOLzHADx0Ww	Charlie's Market
8rb-3VYXE37IZx4yOdsKw	Sharky's Sports Bar & Grill
mFay4RDyefaY2NDLfsAAA	River City Games
-ZXKcyDj1QimnlyGtYtg	Gilley's Antique Mall

MongoDB Query

```

db.business.aggregate([{$addFields: {count_2019: {$size: {$filter: {input: {$ifNull:
['$checking_date', []]}, as: 'date', cond: {$eq: [{$year: '$$date'], 2019}}]}, count_2020:
{$size: {$filter: {input: {$ifNull: ['$checking_date', []]}, as: 'date', cond: {$eq: [{$year:
'$$date'], 2020}}]}}, {$batch: {$set: [{$count_2020', '$count_2019'}}]}, {$project:
{name: 1}}]}])

```

MongoDB Query: 3.708425760289165
Time:
MongoDB Query: 17289

7

Select those merchants with an average rating higher than 4 star from 2023-01-01 to now in 'Santa Barbara'

MySQL - 153 rows

▼

```

select b.business_id, b.name, avg(r.stars) as avg_rating
from business b
      join review r
        on b.business_id = r.business_id
where r.date > '2023-01-01 00:00:00'
      and b.city = 'Santa Barbara'
group by b.business_id, b.name
having avg_rating > 4
order by avg_rating desc;

```

▼

business_id	name	avg_rating
_L0DNfnS5VFGv-V1WcMdmA	Hugo's Auto Detailing	5.0000
13UbOVDFdxloxaient5XWA	Jump On The School Bus	5.0000

1hphQunRLjBTCgZ-SP7IaQ HouseMaster	5.0000	
1NQ2tjNj3qQt1sXXSGSsia Members Only Barber Shop	5.0000	
1vj7ACAQgZHCY6vzo2xBdg Lighthouse Skateshop	5.0000	
3jwfajUa1Vt8x3F8E9ZVaw Top Notch Driving School	5.0000	
3ZqShggSayVJ_OJ0DXpvHA Porsche Santa Barbara	5.0000	
425FOxIzHPcOB0niWc6-1w Spudnuts Donuts	5.0000	
4eBoPWRT7t8Sot-dwl3N-Q Lisa Rader, NP - Women's Medical Clinic	5.0000	
6iu-706DFVz3e6sUIwF9nA Exquisite Auto Body & Detail	5.0000	
+-----+-----+-----+-----+		

MongoDB - 153 rows

```

db.review.aggregate(
  [
    {
      $lookup: {
        from: "business",
        localField: "business_id",
        foreignField: "_id",
        as: "business"
      }
    },
    {
      $unwind: "$business"
    },
    {
      $match: {
        "business.city": "Santa Barbara",
        "date": { $gt: ISODate("2023-01-01T00:00:00.000Z") }
      }
    },
    {
      $group: {
        _id: {business_id: "$business_id", name: "$business.name"},
        avg_star: { $avg: "$stars" }
      }
    },
    {
      $match: {
        "avg_star": { $gt: 4 }
      }
    },
    {

```

```

        $sort: {
          avg_star: -1
        }
      },
      {
        $project: {
          business_id: "$_id.business_id",
          name: "$_id.name",
          avg_star: "$avg_star",
          _id:0
        }
      }
    ]
  )

```

▼

+-----+-----+-----+		
----+		
avg_star	business_id	name
+-----+-----+-----+		
----+		
5	xcUh0dC329iPNybY479X7w	NV Glam Studio
5	YP7dUMVSmUE8xt-QH6M1aA	SeaVees
5	bxDk3YLoMOTdmmf_4AN_4g	Pacific Crest Hotel Santa Barbara
5	Jb1MlURq6ItKZ244tyoirA	Jessie Sessions - Berkshire Hathaway Santa Barbara
5	ZPWJAgvdHREomrUJ8tIh2Q	The Granada Theatre
5	9izBQhYFyrTzInLjZYvO_A	CalCoast Glass Tinting, Inc
5	1NQ2tjNj3qQt1sXXSGSsia	Members Only Barber Shop
5	LHzWEwFemndC1q1UTi8Itw	Santa Barbara PC Mechanic
5	dPt9QgLAiUI2a-CKdv5cSA	Santa Barbara Humane
5	HNxw1d9P3_jwx9d215bfEw	Fiesta jumps

+

+

+

+

+

Query 1

Query 2

Query 3

Query 4

Query 5

Query 6

Query 7

Query 8

Query 9

Query 10

Query 11

Query 12

Select those merchants with an average rating higher than 4 star from 2023-01-01 to now in 'Santa Barbara'

avg_rating	business_id	name
5.0000	_LODNh5VF6v-VlWcMdnA	Hugo's Auto Detailing
5.0000	13UBOVDFd6loxiak5XWA	Jump On The School Bus
5.0000	1hphQmRlj8TCgZ-SP7laQ	HouseMaster
5.0000	1NQ2tjNj3qQt1xXSGSuiA	Members Only Barber Shop
5.0000	1vj7ACAQgZHCY6vo2vBdg	Lighthouse Skateshop
5.0000	1jwfeqJia1V5Bx3F8E9ZVaw	Top Notch Driving School
5.0000	3ZqShggSayVj_OjDDXpHA	Porsche Santa Barbara
5.0000	42SF0xzhPcOB0nW6-1w	Spudnuts Donuts
5.0000	4eBoPWRT7185ot-dwJ3N-Q	Lisa Radet, NP - Women's Medical Clinic
5.0000	6iu-706DFVz3e6UlwF9nA	Exquisite Auto Body & Detail

12345

MySQL Query

```
select b.business_id, b.name, avg(r.stars) as avg_rating from business b join review r on b.business_id = r.business_id where r.date > '2023-01-01 00:00:00' and b.city = 'Santa Barbara' group by b.business_id, b.name having avg_rating > 4 order by avg_rating desc
```

MySQL Query Time

33.98815846443176

MySQL Query

153

Number

avg_star	business_id	name
5	jQzW5TzidnTC_aU9nGFYHg	Santa Barbara Design Center
5	pAak7EHnzwm5ST_JHuFJQ	Federal Drug Co.
5	g2KcGgle-T7vrvAfoEVA	Comedy Hideaway
5	T33982ingDobYv5-WX2ltg	Sensational Pets
5	13UBOVDFd6loxiak5XWA	Jump On The School Bus
5	YbnYfHNg_fHbl-hcFg4bvQ	Santa Barbara Adventure Company
5	nQc_jiWRAOC9RE_-eZemA	WINK
5	bGZeYtrgClowHkdlPUoJSA	Organic Aesthetics
5	42SF0xzhPcOB0nW6-1w	Spudnuts Donuts
5	Ac9qKcSYnekerWQEMe4w	Kendrick Guehr - Santa Barbara and Mon tecito Real Estate

12345

MongoDB Query

```
db.review.aggregate([{$lookup: {from: 'business', localField: 'business_id', foreignField: '_id', as: 'business'}}, {$unwind: '$business'}, {$match: {'business.city': 'Santa Barbara', 'date': {'$gt': ISODate('2023-01-01T00:00:00Z')}}}, {$group: {'_id': {'business_id': '$business_id', name: '$business.name', avg_star: { $avg: '$stars' } }}, {$sort: {'avg_star': { $gt: 4 } }}, {'$sort': {'avg_star': -1}}, {$project: {'business_id': '$_id.business_id', name: '$_id.name', avg_star: '$avg_star', '_id': 0}}])
```

MongoDB Query

62.85083347892761

Time

MongoDB Query

153

8

Search review data to find all reviews that mention "excellent service" and display essential details about the merchant.

MySQL - 23857 rows

▼

```
select b.business_id, b.name, r.text
from business b
      join review r
      on b.business_id = r.business_id
where r.text like '%excellent service%';
```

▼

+

+

+

+

+

24 / 43


```

-----+
|business_id      |name      |text

```

```

|
+-----+-----+-----+

```

```

-----+

```

```

|ifzM8bH009rHCh1VCMq_JQ|St Petersburg Dental Center|Dr. Crawford is wonderful!
I had a really horrible experience at Apple dental on my first filling. They
did it without numbing the area. And it hurt!!!!Dr. Crawford did my first real
legit filling when I was 17 and he was caring, thorough, and professional. I
felt zero pain!I am back here with him because my insurance is welcomed here
and I still have excellent service here. I chipped my tooth and I received
prompt and great service! I love Maggie as my dental hygienist as well. I have
gone to her for several years and she does not take short cuts.

```

```

|ifzM8bH009rHCh1VCMq_JQ|St Petersburg Dental Center|Dr. Crawford is wonderful!
I had a really horrible experience at Apple dental on my first filling. They
did it without numbing the area. And it hurt!!!!Dr. Crawford did my first real
legit filling when I was 17 and he was caring, thorough, and professional. I
felt zero pain!I am back here with him because my insurance is welcomed here
and I still have excellent service here. I chipped my tooth and I received
prompt and great service! I love Maggie as my dental hygienist as well. I have
gone to her for several years and she does not take short cuts.

```

```

|_bwVn1SMdFTdwskc7WMQOQ|Metairie Cleaners      |I honestly wish I had more
clothes to clean because when I came here I felt like family. My cleaners
closed due to covid so I had to find a new cleaners. I did a google search and
decided to give this place a try. I am so glad I did because Peggy welcomed me

```

with open arms. She was so friendly and cracking jokes, I felt like I was with family. All the staff are friendly. I have visited twice and had a few blazers cleaned and a coat. Super reasonable with pricing as well. They are open till 5 or 530 and will bring clothes out to the car to you if you being extra careful. Try this place and make a new friend while getting excellent service!|
|_bwVn1SMdFTdwskc7WMQOQ|Metairie Cleaners |I honestly wish I had more clothes to clean because when I came here I felt like family. My cleaners closed due to covid so I had to find a new cleaners. I did a google search and decided to give this place a try. I am so glad I did because Peggy welcomed me with open arms. She was so friendly and cracking jokes, I felt like I was with family. All the staff are friendly. I have visited twice and had a few blazers cleaned and a coat. Super reasonable with pricing as well. They are open till 5 or 530 and will bring clothes out to the car to you if you being extra careful. Try this place and make a new friend while getting excellent service!|
|g2KcfGgIa-T7vrwAsFoEVA|Comedy Hideaway |Attended the Special Preview show on Friday and was blown away! The best comedy show in SB is finally back!! The comics were all hilarious and had my friends and I laughing til we cried & cheeks sore! Can't wait to come back. This new location is a gem with great food and drinks and excellent service!

|
|g2KcfGgIa-T7vrwAsFoEVA|Comedy Hideaway |Attended the Special Preview show on Friday and was blown away! The best comedy show in SB is finally back!! The comics were all hilarious and had my friends and I laughing til we cried & cheeks sore! Can't wait to come back. This new location is a gem with great food and drinks and excellent service!

|
|g2KcfGgIa-T7vrwAsFoEVA|Comedy Hideaway |Attended the Special Preview show on Friday and was blown away! The best comedy show in SB is finally back!! The comics were all hilarious and had my friends and I laughing til we cried & cheeks sore! Can't wait to come back. This new location is a gem with great food and drinks and excellent service!

|

|g2KcfGgIa-T7vrwAsFoEVA|Comedy Hideaway |Attended the Special Preview show on Friday and was blown away! The best comedy show in SB is finally back!! The comics were all hilarious and had my friends and I laughing til we cried & cheeks sore! Can't wait to come back. This new location is a gem with great food and drinks and excellent service!

|
|CJNKR_FQ4B0iJqcTtZlkoA|Kinzels Flower Shop |My family has ordered flowers multiple times and we've always gotten excellent service and quality. I want to especially mention how kind they were just recently for my Grandmother's birthday. Once they heard she was turning 103, they send her their own separate bouquet of roses. Above and beyond!

|
|CJNKR_FQ4B0iJqcTtZlkoA|Kinzels Flower Shop |My family has ordered flowers multiple times and we've always gotten excellent service and quality. I want to especially mention how kind they were just recently for my Grandmother's birthday. Once they heard she was turning 103, they send her their own separate bouquet of roses. Above and beyond!

|
+-----+-----+-----

-----+

MongoDB - 23857 rows



```
db.review.aggregate(
  [
    {
      $lookup: {
        from: "business",
        localField: "business_id",
        foreignField: "_id",
        as: "business"
      }
    },
    {
      $unwind: "$business"
    },
    {
      $match: {
        text: { $regex: "excellent service" }
      }
    },
    {
      $project: {
        _id: 0,
        business_id: '$business_id',
        name: "$business.name",
        text: '$text'
      }
    }
  ]
)
```

[illegible]

|
+-----+-----+-----

-----+

|ifzM8bH009rHCh1VCMq_JQ|St Petersburg Dental Center|Dr. Crawford is wonderful!
I had a really horrible experience at Apple dental on my first filling. They
did it without numbing the area. And it hurt!!!!Dr. Crawford did my first real
legit filling when I was 17 and he was caring, thorough, and professional. I
felt zero pain!I am back here with him because my insurance is welcomed here
and I still have excellent service here. I chipped my tooth and I received
prompt and great service! I love Maggie as my dental hygienist as well. I have
gone to her for several years and she does not take short cuts.

|ifzM8bH009rHCh1VCMq_JQ|St Petersburg Dental Center|Dr. Crawford is wonderful!
I had a really horrible experience at Apple dental on my first filling. They
did it without numbing the area. And it hurt!!!!Dr. Crawford did my first real
legit filling when I was 17 and he was caring, thorough, and professional. I
felt zero pain!I am back here with him because my insurance is welcomed here
and I still have excellent service here. I chipped my tooth and I received
prompt and great service! I love Maggie as my dental hygienist as well. I have
gone to her for several years and she does not take short cuts.

|_bwVn1SMdFTdwskc7WMQOQ|Metairie Cleaners |I honestly wish I had more
clothes to clean because when I came here I felt like family. My cleaners
closed due to covid so I had to find a new cleaners. I did a google search and
decided to give this place a try. I am so glad I did because Peggy welcomed me
with open arms. She was so friendly and cracking jokes, I felt like I was with
family. All the staff are friendly. I have visited twice and had a few blazers
cleaned and a coat. Super reasonable with pricing as well. They are open till
5 or 530 and will bring clothes out to the car to you if you being extra
careful. Try this place and make a new friend while getting excellent service!|
|_bwVn1SMdFTdwskc7WMQOQ|Metairie Cleaners |I honestly wish I had more
clothes to clean because when I came here I felt like family. My cleaners
closed due to covid so I had to find a new cleaners. I did a google search and
decided to give this place a try. I am so glad I did because Peggy welcomed me

with open arms. She was so friendly and cracking jokes, I felt like I was with family. All the staff are friendly. I have visited twice and had a few blazers cleaned and a coat. Super reasonable with pricing as well. They are open till 5 or 530 and will bring clothes out to the car to you if you being extra careful. Try this place and make a new friend while getting excellent service!|
|g2KcfGgIa-T7vrwAsFoEVA|Comedy Hideaway |Attended the Special Preview show on Friday and was blown away! The best comedy show in SB is finally back!! The comics were all hilarious and had my friends and I laughing til we cried & cheeks sore! Can't wait to come back. This new location is a gem with great food and drinks and excellent service!

|
|g2KcfGgIa-T7vrwAsFoEVA|Comedy Hideaway |Attended the Special Preview show on Friday and was blown away! The best comedy show in SB is finally back!! The comics were all hilarious and had my friends and I laughing til we cried & cheeks sore! Can't wait to come back. This new location is a gem with great food and drinks and excellent service!

|
|g2KcfGgIa-T7vrwAsFoEVA|Comedy Hideaway |Attended the Special Preview show on Friday and was blown away! The best comedy show in SB is finally back!! The comics were all hilarious and had my friends and I laughing til we cried & cheeks sore! Can't wait to come back. This new location is a gem with great food and drinks and excellent service!

|
|g2KcfGgIa-T7vrwAsFoEVA|Comedy Hideaway |Attended the Special Preview show on Friday and was blown away! The best comedy show in SB is finally back!! The comics were all hilarious and had my friends and I laughing til we cried & cheeks sore! Can't wait to come back. This new location is a gem with great food and drinks and excellent service!

|

|CJNKR_FQ4B0iJqcTtZlkoA|Kinzels Flower Shop |My family has ordered flowers multiple times and we've always gotten excellent service and quality. I want to especially mention how kind they were just recently for my Grandmother's birthday. Once they heard she was turning 103, they send her their own separate bouquet of roses. Above and beyond!

|
|CJNKR_FQ4B0iJqcTtZlkoA|Kinzels Flower Shop |My family has ordered flowers multiple times and we've always gotten excellent service and quality. I want to especially mention how kind they were just recently for my Grandmother's birthday. Once they heard she was turning 103, they send her their own separate bouquet of roses. Above and beyond!

|
+-----+-----+-----

-----+

Search review data to find all reviews that mention "excellent service" and display essential details about the merchant.

business_id	name	review_id	text
ifzM8bH009rHCh1VCMq_JQ	St Petersburg Dental Center	654b0c62c0ee6c5370d45faa	Dr. Crawford is wonderful!! I had a really horrible experience at Apple dental on my first filling. They did it without numbing the area. And it hurt!!!! Dr. Crawford did my first legit filling when I was 17 and he was caring, thorough, and professional. I felt zero pain!! I am back here with him because my insurance is welcomed here and I still have excellent service here. I chipped my tooth and I received prompt and great service!! I love Maggie as my dental hygienist as well. I have gone to her for several years and she does not take short cuts.

Mysql Query: select b.business_id, b.name, r.review_id, r.text from business b join review r on b.business_id = r.business_id where r.text like '%excellent service%';

Mysql Query Time: 29.432244062423706

Mysql Query: 23857

Number

business_id	name	text
ifzM8bH009rHCh1VCMq_JQ	St Petersburg Dental Center	Dr. Crawford is wonderful!! I had a really horrible experience at Apple dental on my first filling. They did it without numbing the area. And it hurt!!!! Dr. Crawford did my first legit filling when I was 17 and he was caring, thorough, and professional. I felt zero pain!! I am back here with him because my insurance is welcomed here and I still have excellent service here. I chipped my tooth and I received prompt and great service!! I love Maggie as my dental hygienist as well. I have gone to her for several years and she does not take short cuts.

MongoDB Query: db.review.aggregate([{\$lookup: {from: 'business', localField: 'business_id', foreignField: '_id', as: 'business'}}, {\$unwind: '\$business'}, {\$match: ...}]

MongoDB Query: 27.59043788909912

Time

MongoDB Query: 23857

Number

9

Analyze which city has the most 5-star merchants and return the number.

MySQL - 1 rows

```
select b.city, count(b.business_id) as num_5_star
from business b
where b.stars = 5
group by b.city
order by num_5_star desc
limit 1;
```

```
+-----+-----+
|city      |num_5_star|
+-----+-----+
|Philadelphia|1512      |
+-----+-----+
```

MongoDB - 1 rows

▼


```
db.business.aggregate([
  {
    $match: {
      "stars": 5
    }
  },
  {
    $group: {
      _id: "$city",
      count: { $sum: 1 }
    }
  },
  {
    $sort: {
      count: -1
    }
  },
  {
    $limit: 1
  }
])
```

▼

```
+-----+-----+
|_id      |count|
+-----+-----+
|Philadelphia|1512 |
+-----+-----+
```

Query 1
Query 2
Query 3
Query 4
Query 5
Query 6
Query 7
Query 8
Query 9
Query 10
Query 11
Query 12

Analyze which city has the most 5-star merchants and return the number.

city	num_5_star
Philadelphia	1512

1

Mysql Query

select b.city, count(b.business_id) as num_5_star from business b where b.stars = 5 group by b.city order by num_5_star desc limit 1;

Mysql Query Time

0.05199885368347168

Mysql Query

1

Number

_id	count
Philadelphia	1512

1

MongoDB Query

db.business.aggregate([{\$match: {'stars': 5}},{\$group: {'_id': '\$city', count: {'\$sum': 1}}},{\$sort: {'count': -1}},{\$limit: 1}])

MongoDB Query

0.021994590759277344

Time

MongoDB Query

1

Number

10

Providing User-Item Matrix for Collaborative Filtering Algorithms.

MySQL - 1652rows

SELECT

u.user_id,
b.business_id,
r.stars

FROM

business b

JOIN

review r ON b.business_id = r.business_id

JOIN

user u ON r.user_id = u.user_id

WHERE

b.city = 'Whitestown';

user_id

business_id

stars

```
|CyqWfxMfn4uzKiz0BKqgYw|_UqsraH5n4ygauI_iF43Zg|1|
|hm6BsEPCiRa0dfizcTKhAw|_UqsraH5n4ygauI_iF43Zg|5|
|BgW5IPsJCiFs2sV79e42mQ|_UqsraH5n4ygauI_iF43Zg|5|
|SKVSbJM42kuQXyQbEK8ubg|_UqsraH5n4ygauI_iF43Zg|1|
|E3pF0M3g8zdoeSQnRVCLyw|_UqsraH5n4ygauI_iF43Zg|1|
|0qSVgroj0vJYmNVvdHDPQA|_UqsraH5n4ygauI_iF43Zg|1|
|rCd-0qGVWU5FsP90Ndh7Bw|_UqsraH5n4ygauI_iF43Zg|1|
|wdUtEtzu8DPg4xt-SYq0Yg|_UqsraH5n4ygauI_iF43Zg|4|
|XJYsEb0zieHG5VCUp7Q1A|_UqsraH5n4ygauI_iF43Zg|1|
|vGP_zo7Q71sVLJhJKw1J3A|_UqsraH5n4ygauI_iF43Zg|1|
+-----+-----+-----+
```

MongoDB - 1652 rows

```

db.business.aggregate([
  {
    $match: {
      city: "Whitestown"
    }
  },
  {
    $lookup: {
      from: "review",
      localField: "_id",
      foreignField: "business_id",
      as: "review_info"
    }
  },
  {
    $unwind: "$review_info"
  },
  {
    $lookup: {
      from: "user",
      localField: "review_info.user_id",
      foreignField: "_id",
      as: "user_info"
    }
  },
  {
    $unwind: "$user_info"
  },
])

```

```
{
  $project: {
    _id: 0,
    user_id: "$user_info._id", // 确保这里引用的是users集合中的用户ID
    business_id: "$_id", // businesses集合的ID应该直接从当前文档中获取
    stars: "$review_info.stars" // 星级应从reviews集合获取
  }
}
```

```
+-----+-----+-----+
|business_id|stars|user_id|
+-----+-----+-----+
|Agh0Z_PACmbdEpLyjvwZg|1|JN38040k9ee7Tj8vKIIt9ig|
|Agh0Z_PACmbdEpLyjvwZg|1|yQTmWwGiMkqe1TXWeOHohg|
|Agh0Z_PACmbdEpLyjvwZg|5|p1H4RuBwbAsI4rZHEOqPPw|
|Agh0Z_PACmbdEpLyjvwZg|3|1yKon9t3--011k0XSrMbmQ|
|Agh0Z_PACmbdEpLyjvwZg|2|yIpMuEiKAUDyN2aOwQNu5g|
|Agh0Z_PACmbdEpLyjvwZg|4|HyU35rUgH_SxsIb0CwTdw|
|Agh0Z_PACmbdEpLyjvwZg|5|hUjGOCINjRf04bbAe1Nm|
|Agh0Z_PACmbdEpLyjvwZg|1|VcaT3yi09dDxO6xihMQ0iA|
|Agh0Z_PACmbdEpLyjvwZg|2|5_I6qbrEps-4CjLK-oigWg|
|Agh0Z_PACmbdEpLyjvwZg|2|74Y-QDXPItDndxM1KyCE6Q|
+-----+-----+-----+
```

Query 1
Query 2
Query 3
Query 4
Query 5
Query 6
Query 7
Query 8
Query 9
Query 10
Query 11
Query 12

Providing User-Item Matrix for Collaborative Filtering Algorithms.

business_id	stars	user_id
_UqsrH5n4ygaui_jf43Zg	1	CyqWfMfn4uzKz08KqgYw
_UqsrH5n4ygaui_jf43Zg	5	hm6B8ePCiRa0dficzTKhAw
_UqsrH5n4ygaui_jf43Zg	5	BglW5IPsJCFs2sV79e42mQ
_UqsrH5n4ygaui_jf43Zg	1	SKV5bIM42kuQXyQbEK8ubg
_UqsrH5n4ygaui_jf43Zg	1	E3pFOM3g8ad0e5QnRVClyw
_UqsrH5n4ygaui_jf43Zg	1	0q5Vgroj0vYmNvVdHDPQA
_UqsrH5n4ygaui_jf43Zg	1	rCd-QqGVWU5FsP9ONdh7Bw
_UqsrH5n4ygaui_jf43Zg	4	wdUTEtzu8DPg4xt-SYqCYg
_UqsrH5n4ygaui_jf43Zg	1	XJ7sEbOzieHG5VCUp7Q1A
_UqsrH5n4ygaui_jf43Zg	1	vGP_zo7Q7sVLjHJkw1J3A

MySQL Query
SELECT u.user_id, b.business_id, r.stars FROM business b JOIN review r ON b.business_id = r.business_id JOIN user u ON r.user_id = u.user_id WHERE b.city =
MySQL Query Time
0.43399739265441895
MySQL Query
1652
Number

business_id	stars	user_id
4HVnEE3MwFBumdVK_P4oWA	5	vOSUm6Ku6xKudHgR9WFScw
4HVnEE3MwFBumdVK_P4oWA	4	khVdBEDNIH0N8SuGgmzpw
4HVnEE3MwFBumdVK_P4oWA	2	QWCIV2jTDikx84VicHumnA
4HVnEE3MwFBumdVK_P4oWA	4	384TgcDKlguu4_KPulh5Q
4HVnEE3MwFBumdVK_P4oWA	3	ec-Z7VOATepi-F7H40C2eQ
4HVnEE3MwFBumdVK_P4oWA	5	oFG7Jvqj_ZpKaYhRLtrNYw
4HVnEE3MwFBumdVK_P4oWA	1	-Csu_P0IEMM0gImmmfgeA
4HVnEE3MwFBumdVK_P4oWA	1	6eF-v3wwA4jRFKX_6qX9w
4HVnEE3MwFBumdVK_P4oWA	1	v0ElioFH_pQ4A8i5Ar3lg
4HVnEE3MwFBumdVK_P4oWA	4	DwTuHbQIAzmCKdf_f5mOsw

MongoDB Query
db.business.aggregate([{\$match: {city: 'Whitestown'}}, {\$lookup: {from: 'review', localField: '_id', foreignField: 'business_id', as: 'review_info'}}, {\$unwind: '\$review_info'}, {\$lookup: {from: 'user', localField: 'review_info.user_id', foreignField: '_id', as: 'user_info'}}, {\$unwind: '\$user_info'}, {\$project: {_id: 0, user_id: '\$user_info._id', business_id: '\$_id', stars: ...}}]
MongoDB Query Time
1.0159971714019775
Time
MongoDB Query
1652

11

Count the average star ratings for each category and the number of merchants (open doors) in each category in each city and select the category with the highest number of merchants and average star ratings in the city.

MySQL - 340 rows

```
SELECT city, category, averageStars, businessCount
FROM (SELECT b.city,
             c.category,
             AVG(b.stars)
              AS averageStars,
             COUNT(*)
              AS businessCount,
             ROW_NUMBER() OVER (PARTITION BY b.city ORDER BY COUNT(*) DESC,
             AVG(b.stars) DESC) AS rowNum
      FROM business as b
      JOIN
        business_category as c ON b.business_id = c.business_id
     WHERE b.is_open = 1
     GROUP BY b.city, c.category) AS ranked_categories
WHERE businessCount > 10
      and rowNum = 1;
```

city	category	averageStars	businessCount
Abington	Restaurants	3.4838709677419355	31
Affton	Restaurants	3.357142857142857	14
Alton	Restaurants	3.4126984126984126	63
Ambler	Restaurants	3.7346938775510203	49
Antioch	Restaurants	3.1333333333333333	75
Apollo Beach	Restaurants	3.4464285714285716	28
Ardmore	Restaurants	3.7971014492753623	69
Arnold	Restaurants	3.0945945945945947	74
Ashland City	Restaurants	3.3947368421052633	19

Aston	Restaurants 3.5657894736842106 38	
+-----+	+-----+	+-----+

MongoDB - 340 rows

▼

```
db.business.aggregate([
  {
    $match: {
      is_open: 1
    }
  },
  {
    $unwind: "$categories"
  },
  {
    $group: {
      _id: { city: "$city", category: "$categories" },
      averageStars: { $avg: "$stars" },
      businessCount: { $sum: 1 }
    }
  },
  {
    $match: {
      businessCount: { $gt: 10 }
    }
  },
  {
    $sort: { "businessCount": -1 }
  },
  {
    $group: {
      _id: "$_id.city",
      topCategory: { $first: "$_id.category" },
      averageStars: { $first: "$averageStars" },
      businessCount: { $first: "$businessCount" }
    }
  },
  {
    $project: {
      _id: 0,
      city: "$_id",
      category: "$topCategory",
```

```

        averageStars: 1,
        businessCount: 1
    }
}
]);

```

▼

averageStars	businessCount	category	city
3.357142857142857	56	Restaurants	Goodlettsville
3.6481481481481484	54	Restaurants	Collegeville
3.529850746268657	134	Restaurants	Lutz
3.8333333333333335	15	Restaurants	Haddon Heights
3.6818181818181817	11	Restaurants	Joelton
3.0294117647058822	17	Restaurants	West Berlin
3.4537444933920707	227	Restaurants	Brandon
3.6875	16	Restaurants	Skippack
3.710227272727273	176	Restaurants	Carmel
4.225	20	Home Services	Land O Lakes

Query 1
Query 2
Query 3
Query 4
Query 5
Query 6
Query 7
Query 8
Query 9
Query 10
Query 11
Query 12

Count the average star ratings for each category and the number of merchants (open doors) in each category in each city and select the category with the highest number of merchants and average star ratings in the city.

averageStars	businessCount	category	city
3.4838709677419355	31	Restaurants	Abington
3.357142857142857	14	Restaurants	Arlton
3.4126984126984126	63	Restaurants	Alton
3.7346938775510203	49	Restaurants	Amblar
3.1333333333333333	75	Restaurants	Antioch
3.4464285714285716	28	Restaurants	Apollo Beach
3.7971014492753623	69	Restaurants	Ardmore
3.0945945945945947	74	Restaurants	Arnold
3.3947368421052633	19	Restaurants	Ashland City
3.5657894736842106	38	Restaurants	Aston

MySQL Query
SELECT city, category, averageStars, businessCount FROM (SELECT b.city, c.category, AVG(b.stars) AS averageStars, COUNT(*) AS businessCount, ROW_NUMBER() OVER (PARTITION BY b.city ORDER BY COUNT(*) DESC, AVG(b.stars) DESC) AS rownum FROM business as b JOIN business_category as c ON b.business_id = c.business_id WHERE b.is_open = 1 GROUP BY b.city, c.category) AS ranked_categories WHERE businessCount > 10 and rownum = 1;
MySQL Query Time
2.180222749710083
MySQL Query
340
Number

averageStars	businessCount	category	city
3.6451612903225805	31	Restaurants	Hockessin
3.578125	32	Restaurants	Souderton
3.6267920773930755	1964	Restaurants	Tampa
3.4444444444444446	18	Restaurants	Somerdale
3.6	45	Restaurants	Voorhees
3.546875	32	Restaurants	Bordentown
3.58	25	Health & Medical	Trinity
3.4318181818181817	22	Restaurants	Richmond Heights
2.9642857142857144	14	Restaurants	Thorndale
3.0454545454545454	11	Restaurants	Perrysburg

MongoDB Query
db.business.aggregate([{\$match: {is_open: 1}}, {\$group: {'_id': {'city': '\$city', 'category': '\$category'}, 'averageStars': { '\$avg': '\$stars' }, 'businessCount': { '\$sum': 1 } }}, {\$sort: {'businessCount': -1}}, {\$project: {'_id': '\$_id.city_catCategory': { '\$first': '\$_id.category' }, 'averageStars': { '\$first': '\$averageStars' }, 'businessCount': { '\$first': '\$businessCount' } }}, {\$rename: {'_id': '\$city_cat', 'category': '\$catCategory', 'averageStars': 1, 'businessCount': 1}}]);
MongoDB Query Time
0.9780112762451172
MongoDB Query
340

Use MongoDB's geospatial indexing capabilities to find the highest-rated merchants within 5 kilometers of Tucson's downtown location. (Latitude: 32.25346° N Longitude: 110.91179° W)

MySQL - 2370 rows

▼

```
SELECT b.name, b.address, b.city, b.postal_code, b.stars
FROM business as b
WHERE b.city = 'Tucson'
AND b.stars > 4
AND b.is_open = 1
AND (
  6371 * acos(
    cos(radians(32.25346)) * cos(radians(latitude))
    * cos(radians(longitude) - radians(-110.91179))
    + sin(radians(32.25346)) * sin(radians(latitude))
  )
) <= 50 -- 距离限制为50公里
ORDER BY stars DESC;
```

▼

name	address	city
Heart of the Horse	10519 E Tanque Verde	Tucson
Desert Moon Window Cleaning	null	Tucson
Eleven Caf�	33 N Stone Ave, Ste 150	Tucson
Trinity Diamonds	6070 N Oracle Rd	Tucson
RavenHearse Classic Family Haunt	6541 E Tanque Verde	Tucson
The Mobile Bistro	160 S Scott Ave	Tucson
Brooklyn Bedding	7865 E Broadway Blvd, #175	Tucson

Asymmetry Bodywork Therapies	null	Tucson 85716
5		
Umbrella Roofing	1804 S Euclid Ave	Tucson 85713
5		
Mark & Larry's Auto Service	5460 E. 5th St.	Tucson 85711
5		
+-----+-----+-----+-----+		
+-----+		

MongoDB - 2365 rows

▼

```

db.business.find().forEach(function(doc) {
  db. business.updateOne(
    { _id: doc._id },
    {
      $set: {
        location: {
          type: "Point",
          coordinates: [doc.longitude, doc.latitude]
        }
      }
    }
  );
});

db.business.createIndex({ "location": "2dsphere" })

```

▼

```

db.business.find({
  city: "Tucson",
  stars: { $gt: 4 },
  is_open: 1,
  location: {
    $geoWithin: {
      $centerSphere: [[-110.91179, 32.25346], 50 / 6378.1]
    }
  }
}, {
  name: 1,
  address: 1,
  city: 1,

```

```

    postal_code: 1,
    stars: 1,
    _id: 0
  }).sort({ stars: -1 });

```

▼

address	city	name	postal_code	stars
9698 W Tucson-Ajo Hwy	Tucson	Volare Helicopters	85735	5
6030 S Camino Verde	Tucson	Camino Verde Pet Resort	85757	5
3841 S Frieda Pl	Tucson	Serenity Massage of Tucson	85735	5
7800 W Old Ajo Hwy	Tucson	Tucson Trap & Skeet Club	85735	5
3045 S. Kinney Rd	Tucson	Tucson Mountain Motors	85713	5
2801 S Kinney Rd	Tucson	Tucson Mineral and Gem World	85735	5
2727 S Kinney Rd	Tucson	Cat Mountain Lodge & Roadside Inn	85735	5
Gates Pass Rd	Tucson	Gates Pass	85743	5
9030 W Delfina Dr	Tucson	Sunsets Painting	85735	5
11155 W Calle Pima	Tucson	Casa Tierra Adobe	85743	5

Query 1

Query 2

Query 3

Query 4

Query 5

Query 6

Query 7

Query 8

Query 9

Query 10

Query 11

Query 12

Use MongoDB's geospatial indexing capabilities to find the highest-rated merchants within 5 kilometers of Tucson's downtown location. (Latitude: 32.25346° N Longitude: 110.91179° W)

address	city	name	postal_code	stars
10519 E Tanque Verde	Tucson	Heart of the Horse	85749	5
	Tucson	Desert Moon Window Cleaning	85730	5
33 N Stone Ave, Ste 150	Tucson	Eleven Café	85701	5
6070 N Oracle Rd	Tucson	Trinity Diamonds	85704	5
6541 E Tanque Verde	Tucson	RavenHorse Classic Family Haunt	85715	5
160 S Scott Ave	Tucson	The Mobile Bistro	85701	5
7865 E Broadway Blvd, #175	Tucson	Brooklyn Bedding	85710	5
	Tucson	Axymmetry Bodywork Therapies	85716	5
1804 S Euclid Ave	Tucson	Umbrella Roofing	85713	5
5460 E 5th St.	Tucson	Mark & Larry's Auto Service	85711	5

< 1 2 3 4 5 >

Mysql Query

SELECT b.name, b.address, b.city, b.postal_code, b.stars FROM business as b WHERE b.city = 'tucson' AND b.stars > 4 AND b.is_open = 1 AND ((6371 * cos(cos(radians(32.25346)) + cos(radians(latitude)) * cos(radians(longitude) - radians(-110.91179)) + sin(radians(32.25346)) * sin(radians(latitude)))) <= 50 ORDER BY stars DESC;

Mysql Query Time

0.10199880599975586

Mysql Query

2370

Number

address	city	name	postal_code	stars
7802 E Escalante Rd	Tucson	David Oese, CPA	85730	5
8616 E Broadway Blvd	Tucson	Iora Primary Care	85710	5
	Tucson	Tucson Ghost Tour	85730	5
	Tucson	Apache Towing	85745	5
245 E Congress, Ste 135	Tucson	FIT Boutique Studio	85701	5
1299 W Speedway Blvd	Tucson	El Rio Barber Stylist	85745	5
3851 S Country Club Rd	Tucson	Simonsen Generator Service	85714	5
5294 N Caza Grande Hwy, Ste 110	Tucson	Leon's Exhaust Works	85743	5
43 S 6th Ave	Tucson	Flash in the Past	85701	5
2550 East River Rd	Tucson	OR LOCKSMITH	85718	5

< 1 2 3 4 5 >

MongoDB Query

db.business.find().forEach(function(doc) {db.business.update({'_id': doc._id }, {\$set: {'location': {'type': 'Point', 'coordinates': [doc.longitude, doc.latitude]}}});});db.business.createIndex({'location': '2dsphere'})});db.business.find({'city': 'Tucson', 'stars': {'\$gt': 4 }, 'is_open': 1, 'location': {'\$geoWithin': {'\$centerSphere': [[-110.91179, 32.25346], 50 / 6378.1]}}), {'name': 1, 'address': 1, 'city': 1});

MongoDB Query

0.054997820089990234

Time

MongoDB Query

2365

Number