

Q1 [5 pt] write a SQL query to find name of all the business in the 'fast food' category.

```
SELECT Name  
FROM Business  
WHERE Category = 'fast food';
```

Q2 [10 pt] write a SQL query to find the top 3 users based on total number of fans.

```
SELECT Name  
FROM User  
ORDER BY Fans  
LIMIT 3;
```

Q3 [10 pt] write a SQL query to find the number of users registered after 2020.

```
SELECT COUNT(*)  
FROM User  
WHERE Yelping_since > 2020;
```

Q4 [10 pt] write a SQL query to list the cities with the most reviews in descending order.

```
SELECT City
FROM Business
ORDER BY Review_count DESC;
```

Q5 [10 pt] write SQL to update stars and review_counts for business named " yami sushi".

```
UPDATE Business
SET Stars = 5, Review_count =1000
WHERE Name=" yami sushi";
```

Q6 [10 pt] write a SQL query to find the distribution of star ratings to the business in the Pittsburgh (return stars and corresponding counts).

```
SELECT Review.Stars, COUNT(*)
FROM Review, Business
WHERE Business.ID=Review.Business_id
AND Business.City=" Pittsburgh"
GROUP BY Review.Stars;
```

Q7 [10 pt] for the restaurant named “yami sushi” write a SQL query to find if there are more reviews with the word ‘love’ or with the word ‘hate’.

```
SELECT IF(R1.LOVE_REVIEW > R2.HATE_REVIEW, 'more
reviews with the word 'love'', 'more reviews with the word 'hate'')
FROM (SELECT Business.Name AS R1_NAME, COUNT(*) AS
LOVE_REVIEW
FROM Review, Business
WHERE Business.ID=Review.Business_id
AND Business.Name=" yami sushi"
AND Review.Text LIKE '%love%'
GROUP BY Business.Name, Review.Text
) AS R1,
(SELECT Business.Name AS R2_NAME, COUNT(*) AS
HATE_REVIEW
FROM Review,Business
WHERE Business.ID=Review.Business_id
AND Business.Name=" yami sushi"
AND Review.Text LIKE '%hate%'
GROUP BY Business.Name, Review.Text
)AS R2
Where R1.R1_NAME = R2.R2_NAME;
```

Q8 [10 pt] for each user, calculate average star, average number of “useful”, “funny” and “cool” for all the reviews this user wrote.

```
SELECT User.Name, AVG(Review.Stars), AVG(Review.Useful),  
AVG(Review.Funny), AVG(Review.Cool)  
FROM User, Review  
WHERE User.Id= Review.User_id  
GROUP BY User.Name;
```

Q9 [10 pt] Find the user who has the largest number of fans, return the name and amount for the top 5 businesses he tipped.

```
SELECT User.Name, Tip.amount  
FROM User, Tip, (SELECT User.Id AS User_Id, MAX(User.Fans)  
FROM User) AS R1  
WHERE User.Id= R1.User_Id  
AND Tip.User_Id = R1.User_Id  
ORDER BY Tip.amount DESC  
LIMIT 5;
```

Q10 [15 pt] Group business based on the one that are open and the ones that are closed, what differences you can find between those two groups (you can use different SQL to answer different sub questions)

1. Are there more reviews written for the business that are still open.

SELECT IF(R1.OPEN_REVIEW > R2.CLOSED_REVIEW, 'more reviews for the business that are still open', 'more reviews for the business closed')

FROM (SELECT COUNT(*) AS OPEN_REVIEW

FROM Business

WHERE Business.Is_open=1

) AS R1,

(SELECT COUNT(*) AS CLOSED_REVIEW

FROM Business

WHERE Business.Is_open=0

)AS R2;

2. Are the average star rating higher for business that are open than business that are closed.

SELECT IF(R1.OPEN_avgstar > R2.CLOSED_avgstar, 'the average star rating is higher for business that are open', 'the average star rating is higher for business that are closed')

FROM (SELECT AVG(Business.Stars) AS OPEN_avgstar

FROM Business

WHERE Business.Is_open=1

) AS R1,

(SELECT AVG(Business.Stars)AS CLOSED_avgstar

```
FROM Business
WHERE Business.Is_open=0
)AS R2;
```

3. Are there more tips for business that are open than business that are closed.

```
SELECT IF(R1.OPEN_tips > R2.CLOSED_tips, 'there are more
tips for business that are open', 'there are more tips for business that
are closed')
```

```
FROM (SELECT SUM(Tip.amount) AS OPEN_tips
```

```
FROM Business, Tip
```

```
WHERE Business.Id=Tip.Business_id
```

```
AND Business.Is_open=1
```

```
) AS R1,
```

```
(SELECT SUM(Tip.amount) AS CLOSED_tips
```

```
FROM Business
```

```
WHERE Business.Id=Tip.Business_id
```

```
AND Business.Is_open=0
```

```
)AS R2;
```