HW 3. SQL

# Submission Instructions

* Include your name on your solution.
* Submit by 6:30PM 10/14 on Canvas as a .txt, .sql, or PDF file.
* Optionally, you may include a brief description of the assumptions you made if clarifications are necessary

# Assignment

*For each question below, provide an answer with a* ***single*** *SELECT statement (you can nest SELECT statements as necessary). Use the HW1 and HW2 solutions as a references:* [*http://goo.gl/U5eJ0Z*](http://goo.gl/U5eJ0Z)*,* [*http://goo.gl/PKJHtm*](http://goo.gl/PKJHtm)*, which also has data to test your queries (and feel free to load more data to experiment with!). Apply the concepts from the Working with Data lectures:* [*http://goo.gl/hqEp1Z*](http://goo.gl/hqEp1Z)*,* [*http://goo.gl/kM2gy8*](http://goo.gl/kM2gy8)*. Note that each problem may have multiple solutions. Favor readability and simplicity over complex statements. Also refrain from advanced MySQL shortcuts if applicable (favor standard SQL, although MySQL conveniences such as referencing aliases should be used).*

1. What are the top 10 average review ratings for restaurants? Include the restaurant ID, restaurant name, and average rating in the result set.

2. How many users have created more than one review?

3. What day of the week is most popular for making a reservation? Use the DAYOFWEEK() function on the ‘Start’ column.

4. What are the distinct UserNames for users that have made multiple reservations at any given SitDownRestaurant?

5. Identify the number of credit cards per provider. The credit card provider is determined by the leading digit(s) of the CardNumber. Use this mapping for card providers:

| **Provider** | **CardNumber Starts With** |
| --- | --- |
| American Express | 34, 37 |
| Discover | 6011, 644, 645, 646, 647, 648, 649, 65 |
| MasterCard | 51, 52, 53, 54, 55 |
| Visa | 4 |
| NA | (Everything else) |

6. What is the total number of active restaurants for each type of restaurant (SitDownRestaurant, TakeOutRestaurant, FoodCartRestaurant)?

7. Which UserNames have not created a review, nor created a recommendation, nor created a reservation? In other words, users that have not created any of the following: reviews, recommendations, reservations.

8. What is the ratio of the total number of recommendations to the total number of reviews?

9. Of all the users that have created a reservation at a SitDownRestaurant, what is the percentage that the same user has recommended the same SitDownRestaurant? To calculate this percentage, consider {UserName, RestaurantId} reservation tuples as the denominator and their intersecting {UserName, RestaurantId} recommendation tuples at the numerator.

10. Which UserNames have created more than twice the number of recommendations than number of reviews? Also take into account users that have not created recommendations or reviews -- if a user has created one recommendation but zero reviews, then that user should be included in the result set.