Instacart Data Challenge

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Context

- Data
  - 14,957 orders in San Francisco, Chicago, and New York from May 1st to Jun 2nd, 2014
  - Features: region, delivery time, rating, and reported issue
- Goals
  - Identify market trends and the factors affecting customer satisfactions
 - Improve Customer Support team staffing

Location

- San Francisco and Chicago are more established market, and have 7237 and 6430 orders in May 2014
- New York is a newer market, and has 1290 orders
- There is a weekly trend in SF and Chicago, not as obvious in NY due to smaller amount of data
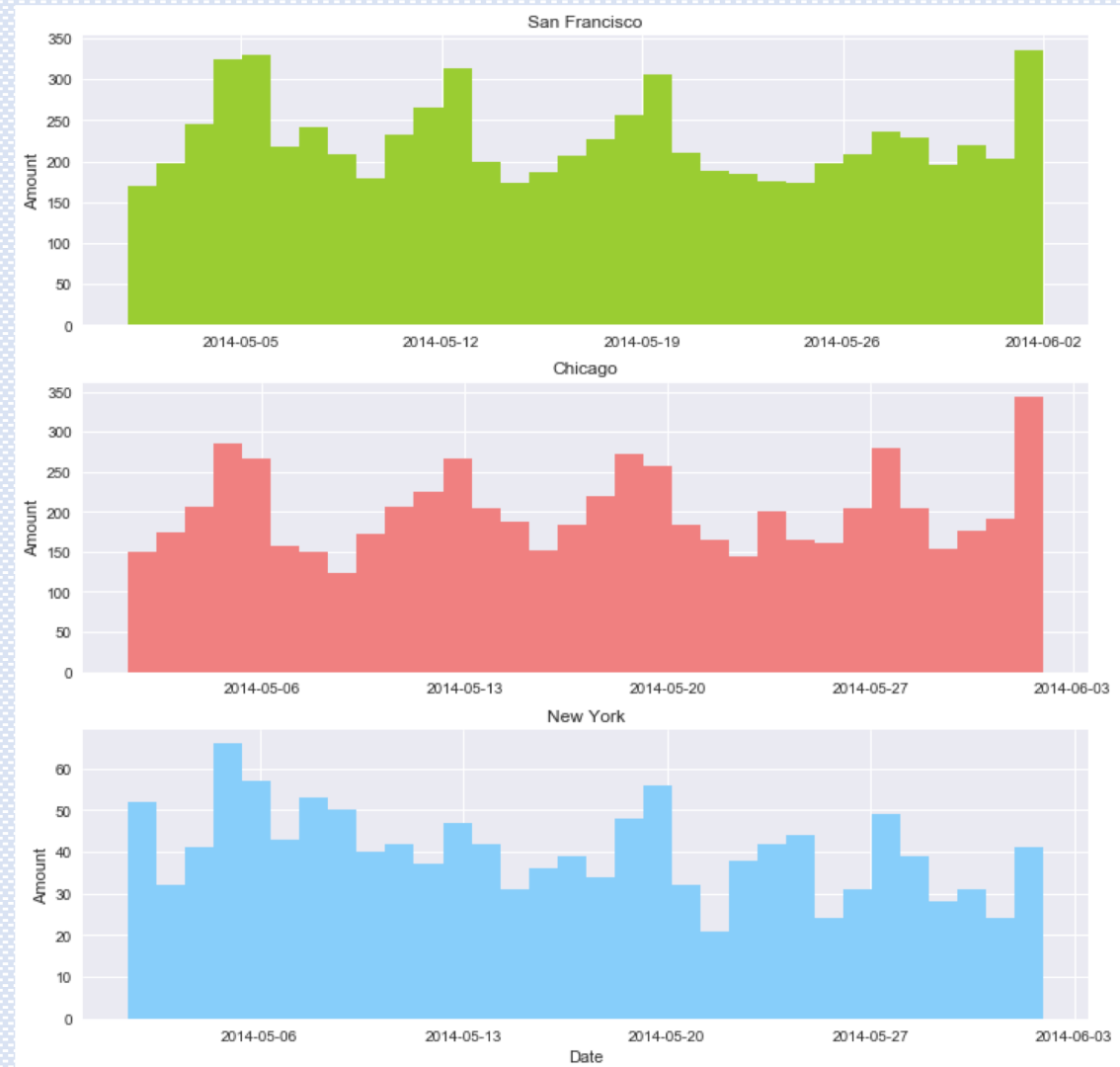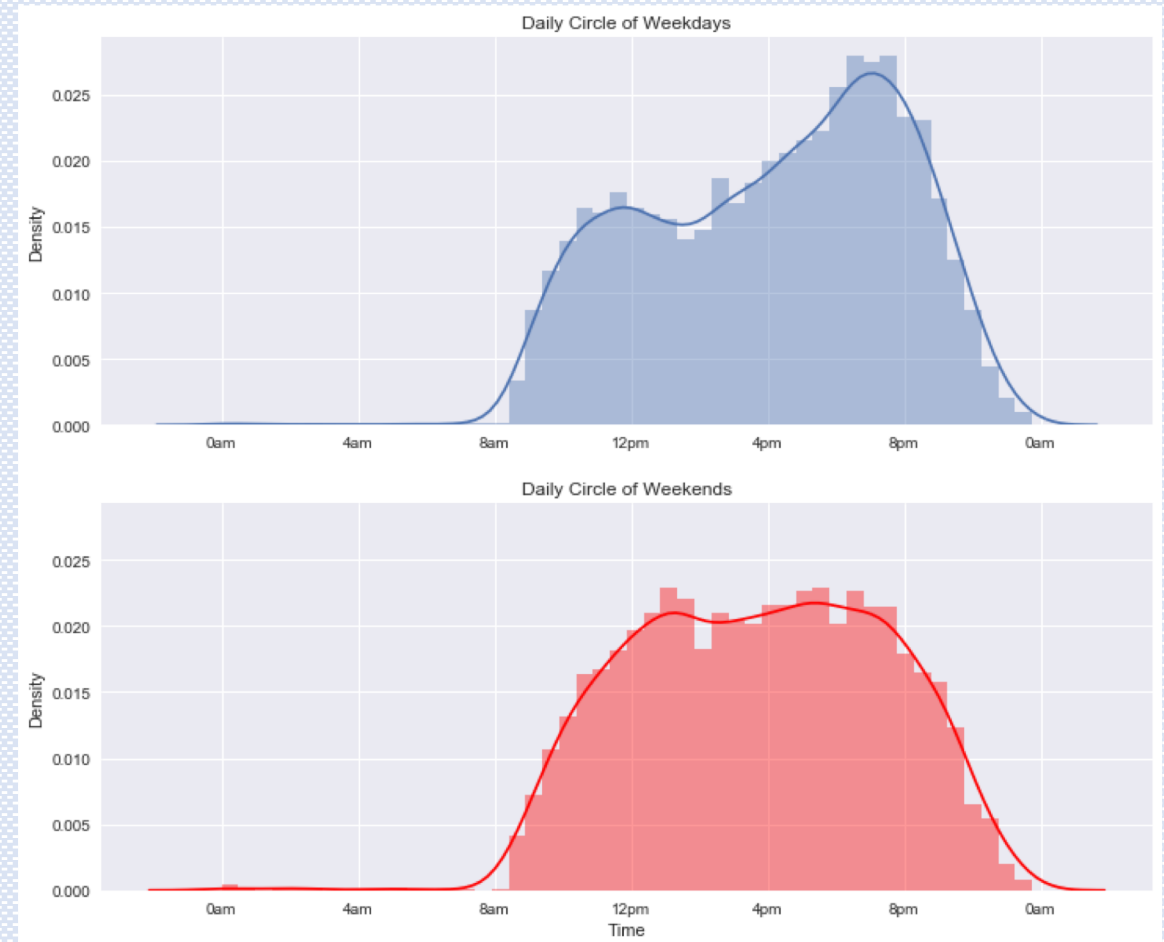
Weekly Pattern

- More customer requests on weekends and Monday
- Wednesday has the lowest amount of orders
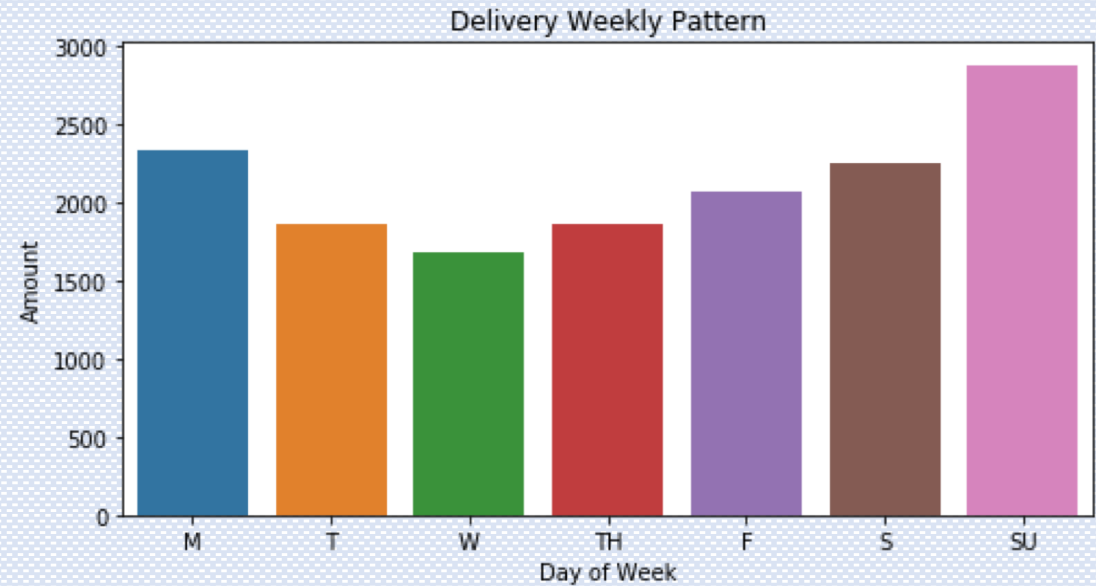
Daily Circle

- Most orders are delivered between 10am to 9pm

- On weekdays, there is a peak around 7pm, at which people get home after work

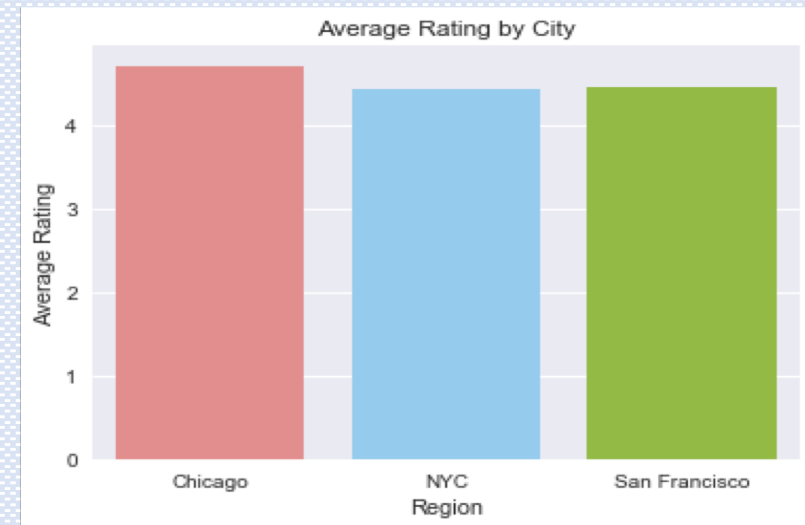- On weekends, the deliveries are distributed more evenly

Order Ratings

- About 90% of feedbacks are positive (4 or 5 stars)

- Neutral and negative ratings (3 stars or lower) are relatively rare

- Chicago has highest average rating of 4.7, NYC and SF have similar ratings around 4.4

### Rating Distribution
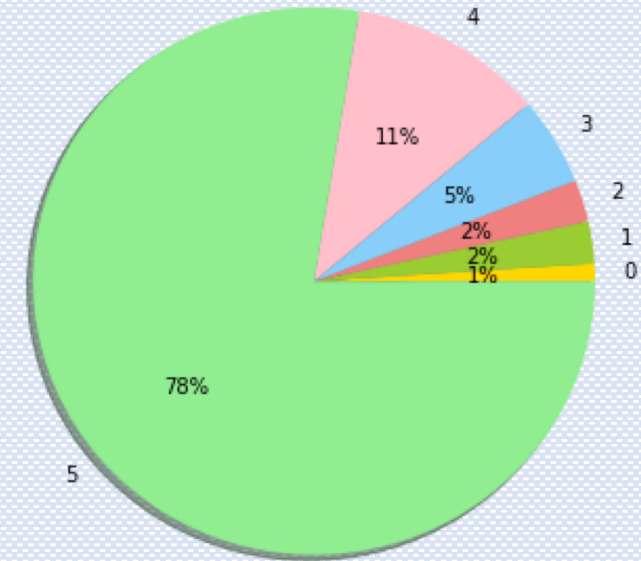
Average Rating by City

Order Ratings

- In SF, the ratings of deliveries before 9am and after 11pm are significantly lower
  - May be due to late delivery
  - Some grocery stores close before midnight, which may cause failure of delivery
- In Chicago and NY, not as many orders are delivered after midnight
  - Though the deliveries after 11pm also receive lower ratings
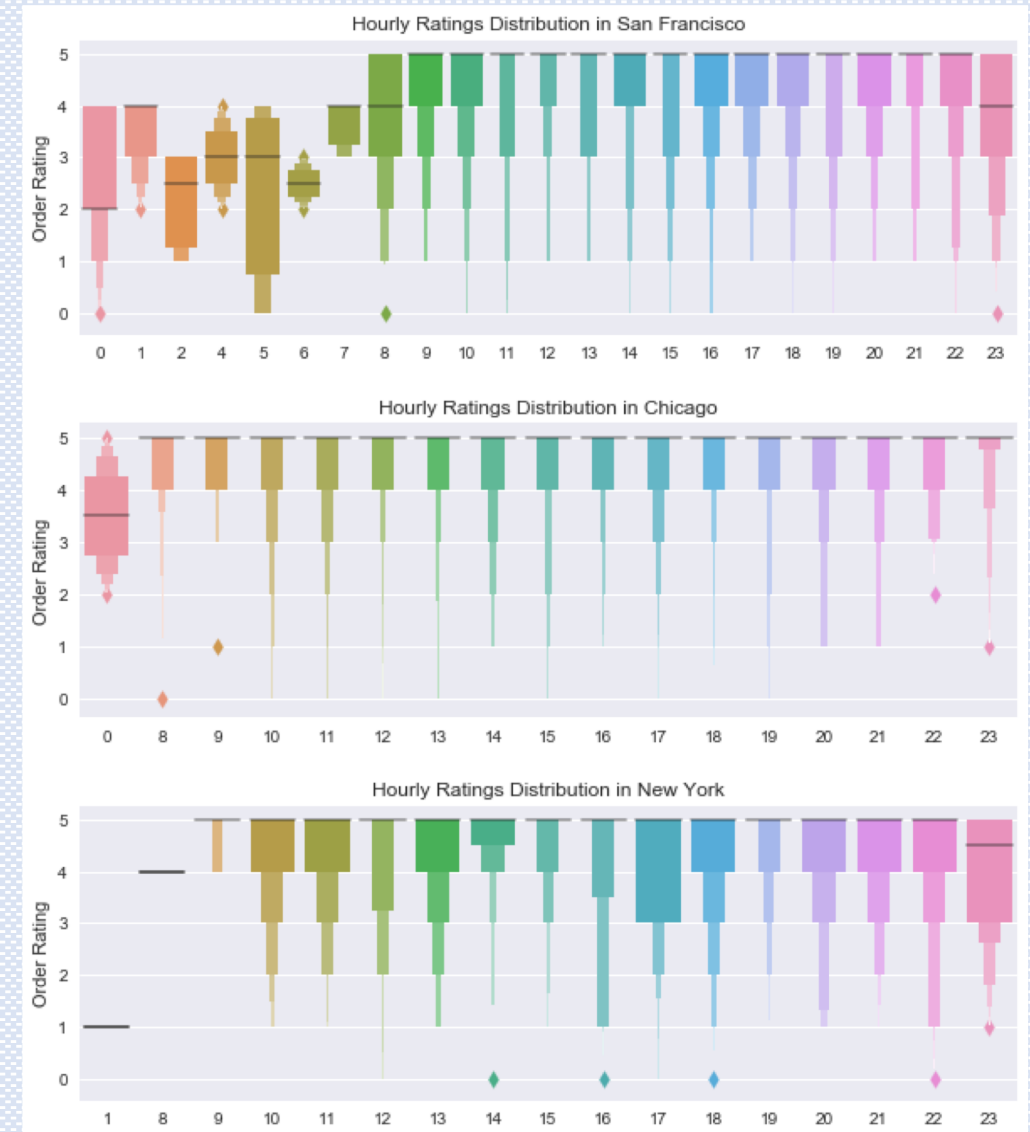
Issues Reported

- The most common issues are wrong item and item damage
  - Wrong items more often in SF
  - Item damage more often in NY
- Many low-rating orders did not specify issue
- Interestingly, some orders with issues still received 5-stars (possibly due to great customer service)
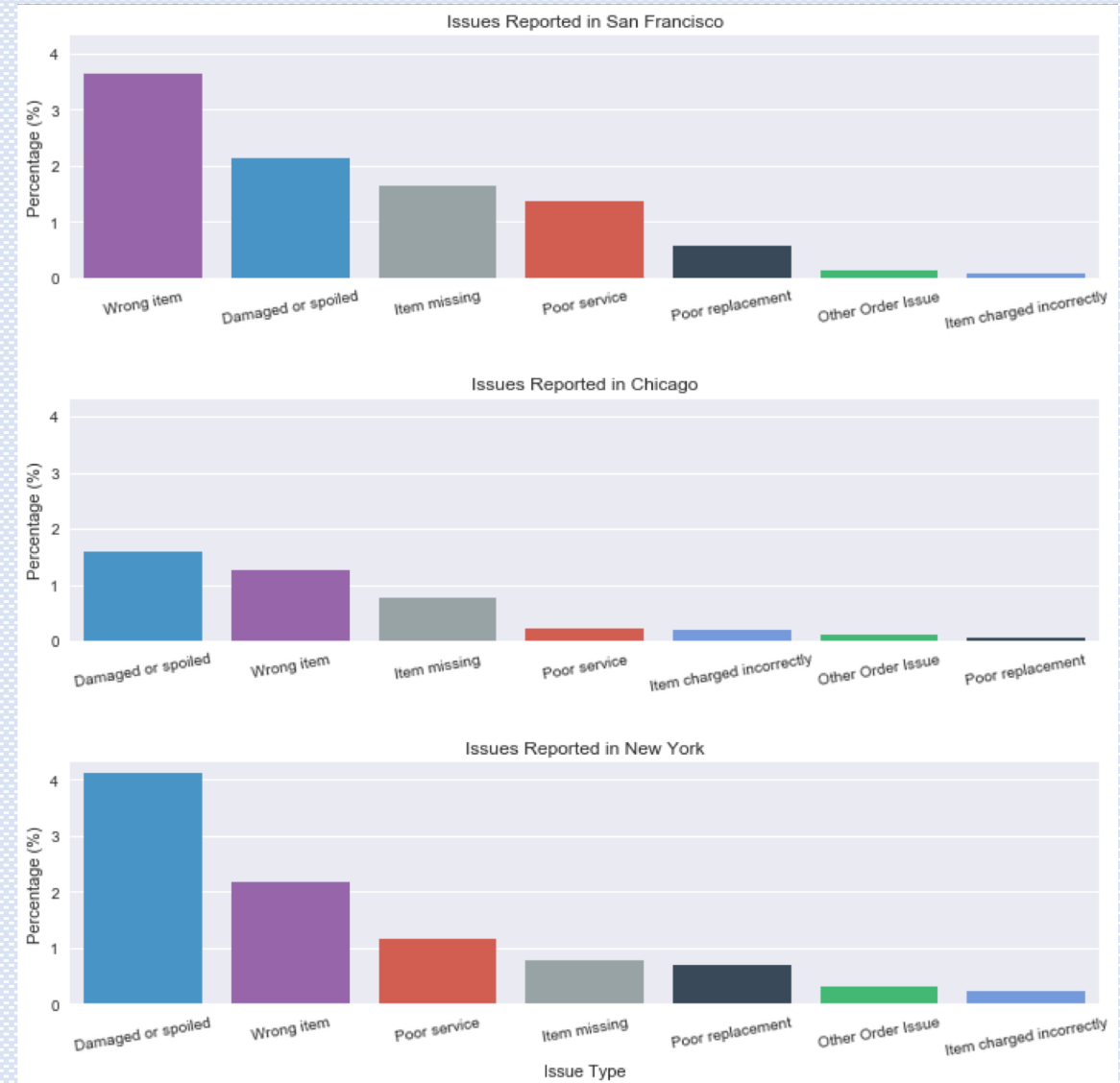
Issues Reported

- Some issues are highly correlated with negative ratings, which may cause customer churn
  - Wrong item and item damage are most common
  - When the replacements are poor, ratings get worse
  - Poor service is impactful on customer satisfaction

Type of issue	# of issue	% of bad rating given issue *
Not issue reported	1045	7%
Wrong item	374	60%
Damaged or spoiled	310	67%
Item missing	178	64%
Poor service	129	74%
Poor replacement	54	82%
Item charged incorrectly	21	10%
Other Order Issue	21	57%

Bad rating: rating 3 or lower

Issues Reported

- Certain days get more reported issues
  - In SF, more issues are reported on Wed and Sun
  - In NY, more issues reported on Mon, Wed, and Sun
- The higher amount of reported issues are possibly associated with specific shoppers
- Need more detail about these shifts

San Francisco			
Day of week	# Issue	# Deliveries	% of orders with issues
Monday	91	1062	8%
Tuesday	65	801	8%
Wednesday	103	730	12%
Thursday	86	860	9%
Friday	91	888	9%
Saturday	81	997	8%
Sunday	176	1206	13%

Chicago			
Day of week	# Issue	# Deliveries	% of orders with issues
Monday	45	995	5%
Tuesday	38	825	5%
Wednesday	34	705	5%
Thursday	23	722	3%
Friday	42	905	5%
Saturday	31	989	3%
Sunday	59	1289	5%

New York			
Day of week	# Issue	# Deliveries	% of orders with issues
Monday	27	192	14%
Tuesday	12	168	7%
Wednesday	16	144	11%
Thursday	12	201	6%
Friday	17	184	9%
Saturday	14	187	7%
Sunday	24	214	11%

What's Next?

- In general
  - Improve on late deliveries after 11pm
  - Extra attention to item replacement, which likely cause negative customer experience
- San Francisco
  - Investigate the frequently reported issues on Wed & Sun shifts
  - Poor services: arrange customer service trainings
  - Wrong item: remind shoppers to double check prior to leaving grocery store
- New York
  - Investigate the frequently reported issues on Mon, Wed, & Sun shifts
  - Poor services: arrange customer service trainings
  - Item damage: encourage shoppers to better pack and carry items, and check item conditions before delivering
- Chicago
  - Keep up the good work!