Taxi Trips in 2021

CS424 Project 2

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Contents

1 Data and Attributes

2 Questions

3 Visual Encoding

4 Interaction Techniques
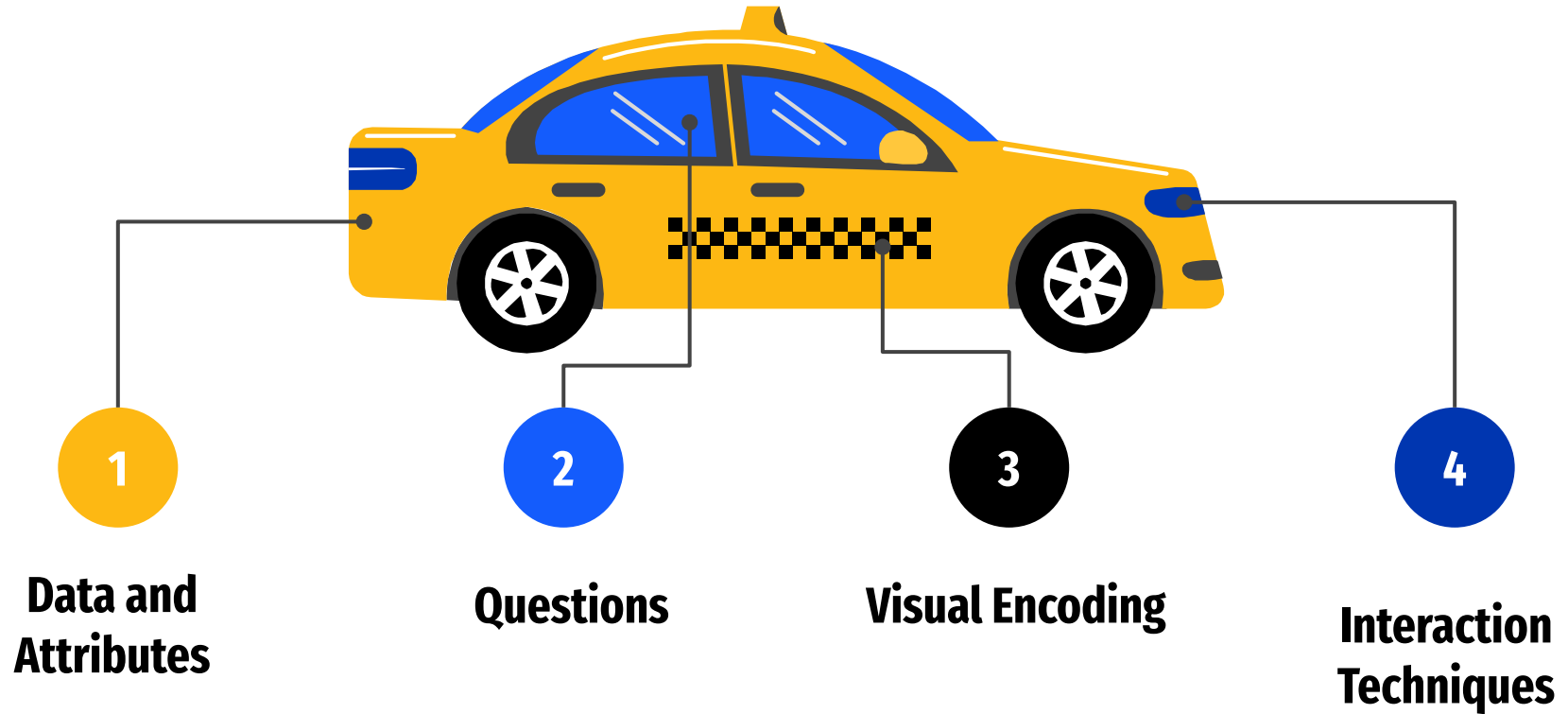
Data and Attributes

```
taxiData = ▽Array(365) [
    0: ▷Object {date: 2021-01-01, total: 27, distance: 9.08, fare: 22.97, tips: 2.98}
    1: ▷Object {date: 2021-01-02, total: 82, distance: 8.98, fare: 23.75, tips: 2.87}
    2: ▷Object {date: 2021-01-03, total: 69, distance: 10.86, fare: 28.58, tips: 3.95}
    3: ▷Object {date: 2021-01-04, total: 345, distance: 3.48, fare: 11.9, tips: 1.16}
    4: ▷Object {date: 2021-01-05, total: 345, distance: 2.66, fare: 10.27, tips: 0.88}
    5: ▷Object {date: 2021-01-06, total: 250, distance: 2.34, fare: 9.8, tips: 0.98}
    6: ▷Object {date: 2021-01-07, total: 358, distance: 2.52, fare: 10.13, tips: 1.03}
    7: ▷Object {date: 2021-01-08, total: 336, distance: 2.97, fare: 11.17, tips: 0.99}
    8: ▷Object {date: 2021-01-09, total: 61, distance: 6.87, fare: 21.9, tips: 2.48}
    9: ▷Object {date: 2021-01-10, total: 41, distance: 11.51, fare: 30.03, tips: 3.73}
    10: ▷Object {date: 2021-01-11, total: 367, distance: 2.67, fare: 10.44, tips: 1.13}
    11: ▷Object {date: 2021-01-12, total: 323, distance: 2.5, fare: 9.89, tips: 0.97}
    12: ▷Object {date: 2021-01-13, total: 352, distance: 2.05, fare: 9.17, tips: 0.95}
    13: ▷Object {date: 2021-01-14, total: 498, distance: 2.36, fare: 10, tips: 1.03}
    14: ▷Object {date: 2021-01-15, total: 371, distance: 2.64, fare: 10.63, tips: 1.35}
    15: ▷Object {date: 2021-01-16, total: 43, distance: 4.29, fare: 14.8, tips: 1.72}
    16: ▷Object {date: 2021-01-17, total: 39, distance: 9.22, fare: 26.34, tips: 3.31}
    17: ▷Object {date: 2021-01-18, total: 239, distance: 3.57, fare: 12.77, tips: 1.33}
    18: ▷Object {date: 2021-01-19, total: 328, distance: 1.92, fare: 8.91, tips: 0.82}
    19: ▷Object {date: 2021-01-20, total: 282, distance: 2.05, fare: 8.98, tips: 0.82}
    … more
]
```

```
marchTrips = ▽Array(18524) [
    0: ▷Object {date: "03/01/2021 12:15:00 AM", distance: 18, fare: 44.5, tips: 10.2, company: "Medallion Leasin"}
    1: ▷Object {date: "03/01/2021 12:15:00 AM", distance: 17.2, fare: 48.75, tips: 5, company: "Taxi Affiliation Services"}
    2: ▷Object {date: "03/01/2021 06:45:00 AM", distance: 1.2, fare: 6.5, tips: 0, company: "Setare Inc"}
    3: ▷Object {date: "03/01/2021 07:15:00 AM", distance: 0.7, fare: 5.5, tips: 0, company: "Taxicab Insurance Agency, LLC"}
    4: ▷Object {date: "03/01/2021 07:15:00 AM", distance: 1, fare: 5.5, tips: 0, company: "Medallion Leasin"}
    5: ▷Object {date: "03/01/2021 07:15:00 AM", distance: 17.3, fare: 43, tips: 5, company: "Chicago Independents"}
juneTrips = ▽Array(62813) [
    0: ▷Object {date: "06/01/2021 12:15:00 AM", distance: "3.5", fare: "0.0", tips: "0.0", company: "Taxi Affiliation Services"}
    1: ▷Object {date: "06/01/2021 12:30:00 AM", distance: "2.92", fare: "10.0", tips: "7.0", company: "24 Seven Taxi"}
    2: ▷Object {date: "06/01/2021 01:30:00 AM", distance: "18.2", fare: "45.0", tips: "9.9", company: "Taxi Affiliation Services"}
    3: ▷Object {date: "06/01/2021 01:45:00 AM", distance: "1.0", fare: "41.5", tips: "9.4", company: "Taxi Affiliation Services"}
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    0: ▷Object {date: "09/01/2021 12:15:00 AM", distance: "0.53", fare: "4.5", tips: "0.0", company: "Flash Cab"}
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    2: ▷Object {date: "09/01/2021 12:30:00 AM", distance: "1.0", fare: "5.75", tips: "0.0", company: "Taxi Affiliation Services"}
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    1: ▷Object {date: "12/01/2021 12:00:00 AM", distance: "6.5", fare: "18.0", tips: "3.22", company: "Medallion Leasin"}
    2: ▷Object {date: "12/01/2021 12:00:00 AM", distance: "0.2", fare: "3.75", tips: "2.0", company: "Blue Ribbon Taxi Association Inc."}
    3: ▷Object {date: "12/01/2021 12:00:00 AM", distance: "3.2", fare: "12.0", tips: "2.5", company: "Blue Ribbon Taxi Association Inc."}
    4: ▷Object {date: "12/01/2021 12:00:00 AM", distance: "0.6", fare: "5.25", tips: "3.0", company: "Taxicab Insurance Agency, LLC"}
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    6: ▷Object {date: "12/01/2021 12:00:00 AM", distance: "18.0", fare: "44.0", tips: "6.0", company: "Taxicab Insurance Agency, LLC"}
    7: ▷Object {date: "12/01/2021 12:00:00 AM", distance: "0.55", fare: "4.75", tips: "4.0", company: "City Service"}
    8: ▷Object {date: "12/01/2021 12:00:00 AM", distance: "1.81", fare: "8.25", tips: "4.0", company: "Flash Cab"}
```

- Taxi Trips of Chicago in 2021
- TaxiData
    - Date
    - Total number of Trips
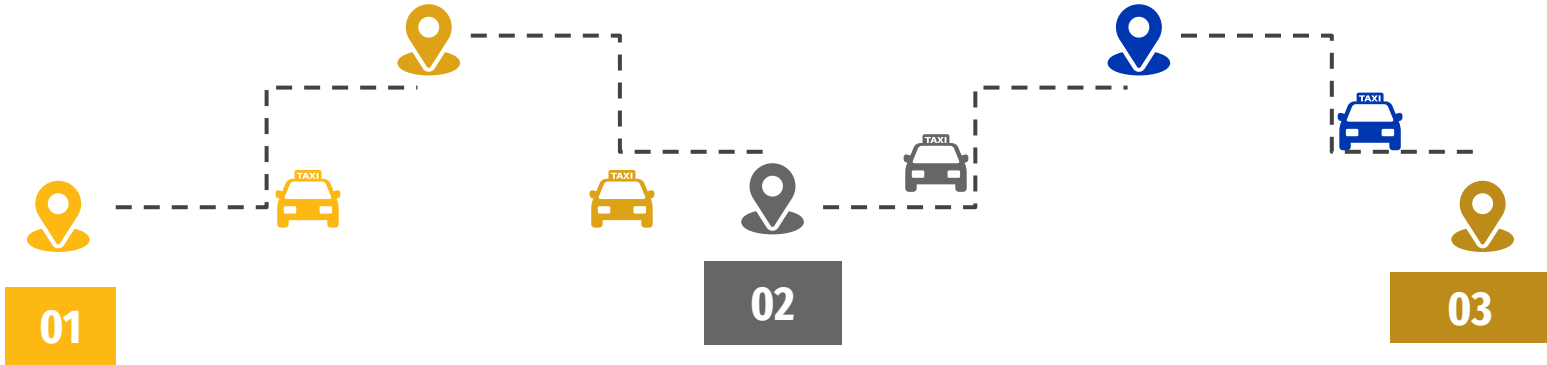   - Average duration, distance, fare and tips of Taxi trips in each day

- Monthly Taxi Trips in March, June, September, and December
    - Date
   - Distance, fare, tips and taxi company of each taxi trip

Questions

01

What months have the higher number of taxi trips and how the tipping is in 2021?

02

Comparing the taxi trips in March, June, September and December, which **taxi company** is more favorable in fare?

03

Comparing the taxi trips in March, June, September and December, which **taxi company** has better service based on tips distribution?
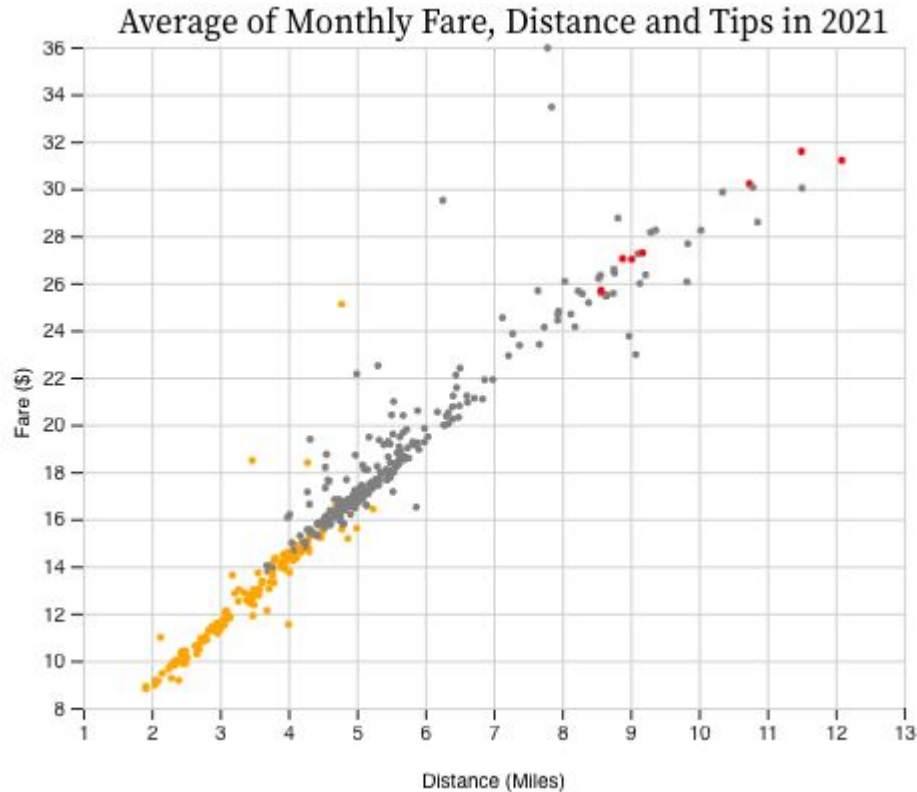
Visual encoding

Distribution of Monthly Taxi Trips in 2021
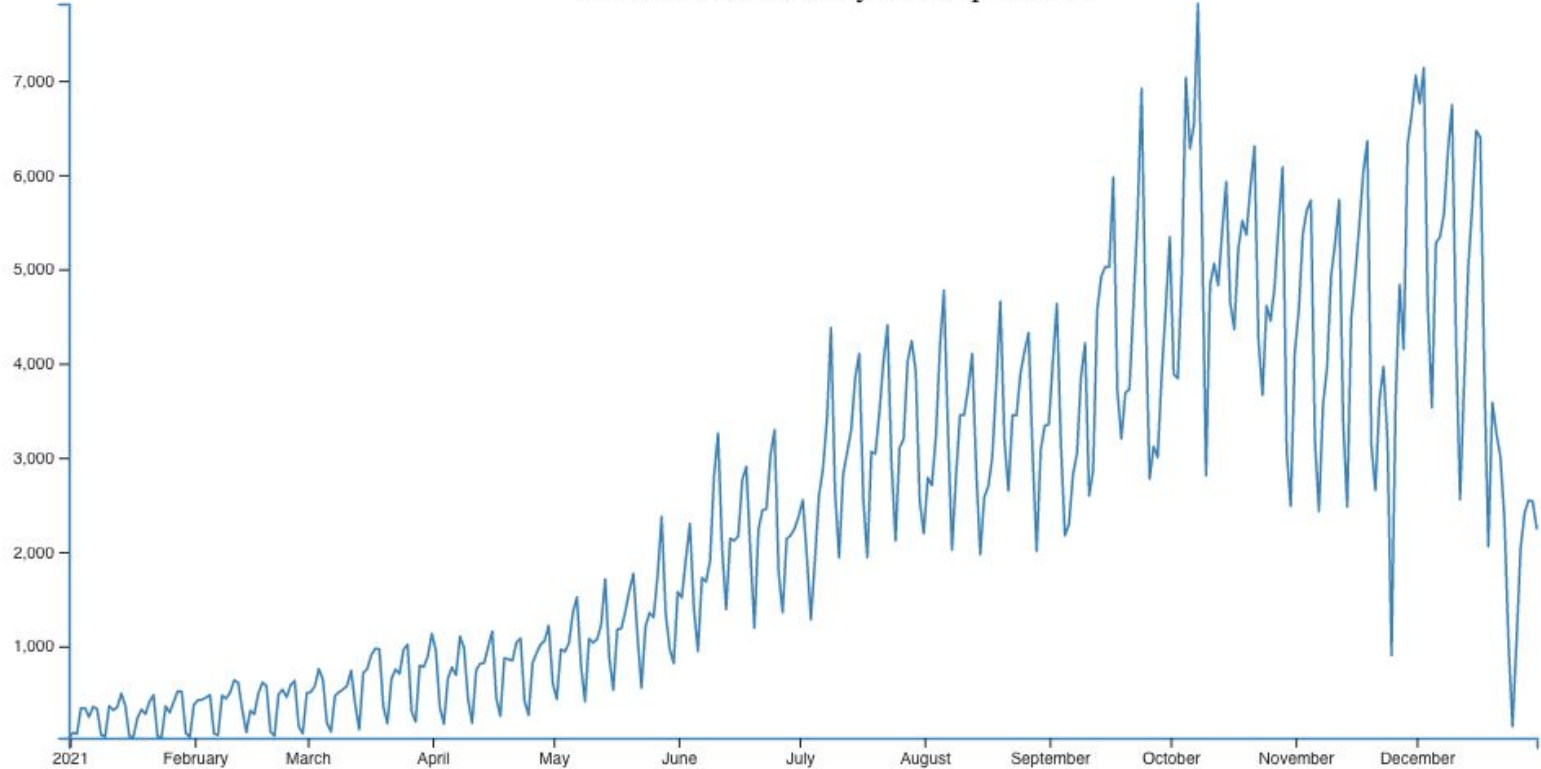
#1 Winter seasons have larger taxi trips

Visual encoding

Average of Monthly Fare, Distance and Tips in 2021

 # 1 Average Tips of Daily Taxi Trips
- ❖ Orange: tips <= $2
- ❖ Gray: $2 < tips <= $4
- ❖ Red: tips > $4
- ❖ Distance and fare increase, tips increase.

Single Interactive View

▽Array(8) [
0: ▷Object {date: "03/01/2021 08:45:00 AM", distance: 25.3, fare: 9.5, tips: 2, company: "Taxicab Insurance Agency, LLC"}
1: ▽Array(8) [
2:   0: ▷Object {date: "03/01/2021 08:45:00 AM", distance: 25.3, fare: 9.5, tips: 2, company: "Taxicab Insurance Agency, LLC"}
3:   1: ▷Object {date: "03/02/2021 09:00:00 AM", distance: 23.8, fare: 6, tips: 2, company: "Taxicab Insurance Agency, LLC"}
4:   2: ▷Object {date: "03/06/2021 11:00:00 AM", distance: 21.3, fare: 7.75, tips: 0, company: "Taxicab Insurance Agency, LLC"}
5:   3: ▷Object {date: "03/10/2021 08:30:00 AM", distance: 22.9, fare: 6, tips: 0, company: "Taxicab Insurance Agency, LLC"}
6:   4: ▷Object {date: "03/13/2021 10:30:00 AM", distance: 23, fare: 6.5, tips: 0, company: "Taxicab Insurance Agency, LLC"}
7:   5: ▷Object {date: "03/14/2021 06:15:00 PM", distance: 23.5, fare: 32, tips: 10, company: "Taxicab Insurance Agency, LLC"}
]   6: ▷Object {date: "03/17/2021 09:30:00 AM", distance: 21.9, fare: 6, tips: 0, company: "Taxicab Insurance Agency, LLC"}
taxi   7: ▷Object {date: "03/22/2021 04:00:00 PM", distance: 251.7, fare: 33.75, tips: 0, company: "Taxi Affiliation Services"}
]
taxi3
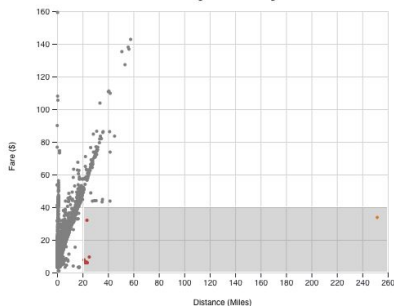
▽Array(5) [
0: ▷Object {date: "06/05/2021 04:30:00 PM", distance: "142.26", fare: "15.5", tips: "0.0", company: "Sun Taxi"}
1: ▷Object {date: "06/05/2021 05:00:00 PM", distance: "154.22", fare: "23.5", tips: "0.0", company: "Sun Taxi"}
2: ▷Object {date: "06/05/2021 06:15:00 PM", distance: "36.92", fare: "11.75", tips: "2.74", company: "Sun Taxi"}
3: ▷Object {date: "06/05/2021 06:30:00 PM", distance: "64.94", fare: "7.0", tips: "0.0", company: "Sun Taxi"}
4: ▷Object {date: "06/11/2021 11:30:00 AM", distance: "102.9", fare: "5.5", tips: "0.0", company: "Taxi Affiliation Services"}
]
taxi6

Interactive Plot of Taxi Trips and Companies in March

Interactive Plot of Taxi Trips and Companies in June
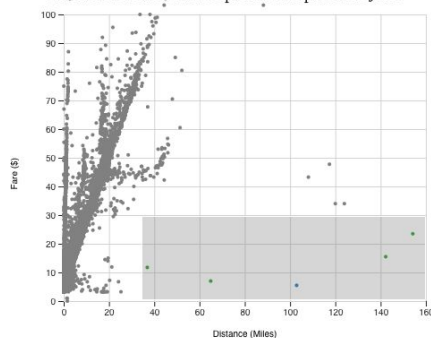
Company with Favorable Fare in March and June

#2 The company with longer distance and lower fare in March:
Taxicab Insurance Agency, LLC

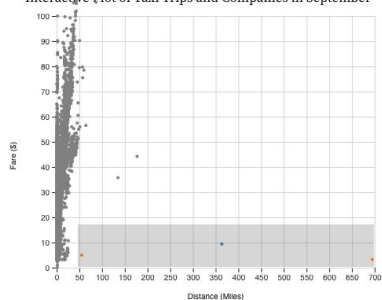#2 The company with longer distance and lower fare in June:
Sun Taxi

Single Interactive View

▽Array(3) [
  0: ▷Object {date: "09/01/2021 11:00:00 AM", distance: "695.0", fare: "3.25", tips: "0.0", company: "Taxi Affiliation Services"}
  1: ▷Object {date: "09/03/2021 03:15:00 PM", distance: "363.68", fare: "9.41", tips: "0.0", company: "Flash Cab"}
  2: ▷Object {date: "09/21/2021 05:15:00 PM", distance: "55.2", fare: "5.0", tips: "0.0", company: "Taxi Affiliation Services"}
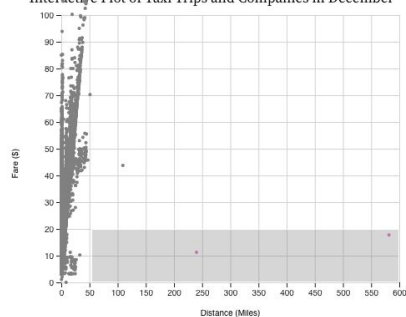]
taxi9

▽Array(2) [
  0: ▷Object {date: "12/18/2021 05:00:00 PM", distance: "240.0", fare: "11.25", tips: "0.0", company: "Taxi Affiliation Services"}
  1: ▷Object {date: "12/31/2021 04:00:00 PM", distance: "581.7", fare: "17.75", tips: "0.0", company: "Taxi Affiliation Services"}
]
taxi12

Interactive Plot of Taxi Trips and Companies in September

Interactive Plot of Taxi Trips and Companies in December

Company with Favorable Fare in September and December

#2 The company with longer distance and lower fare in September:
Taxi Affiliation Service

#2 The company with longer distance and lower fare in December:
Taxi Affiliation Service

Two Linked Views of Trip Total and Company in March

Interactive Plot of Fare, Tips and Companies in March
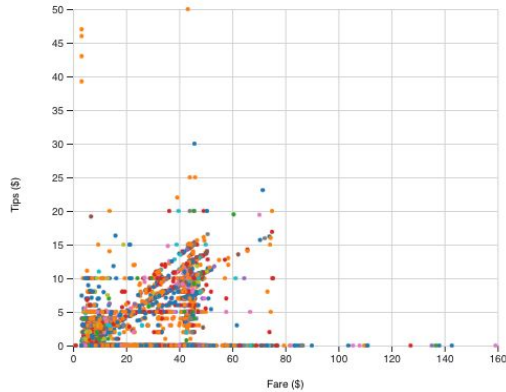
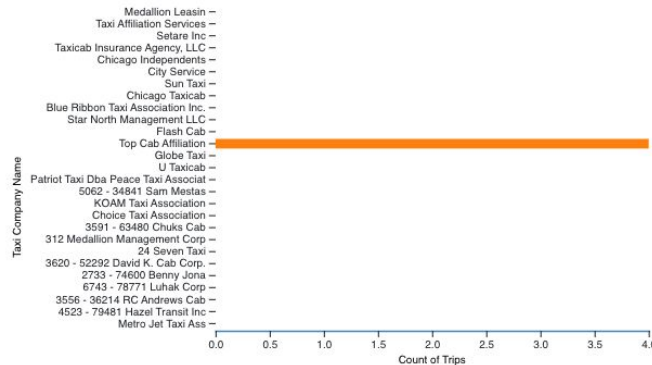Bar chart of each taxi company in March
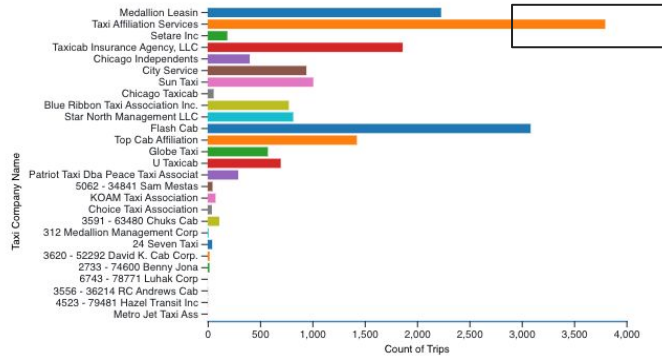
#3 The company with highest trips:

Taxi Affiliation Service

Interactive Plot of Fare, Tips and Companies in March
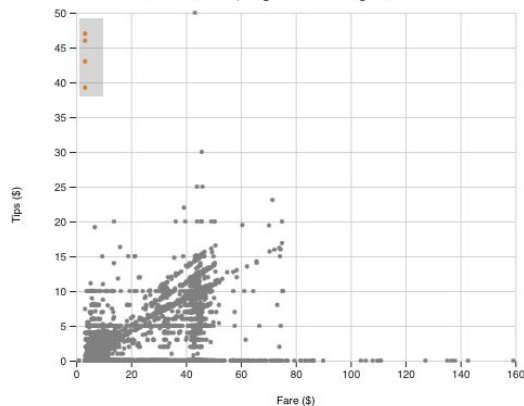
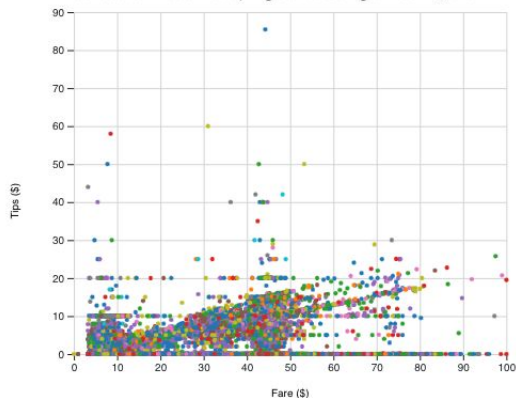Bar chart of each taxi company in March
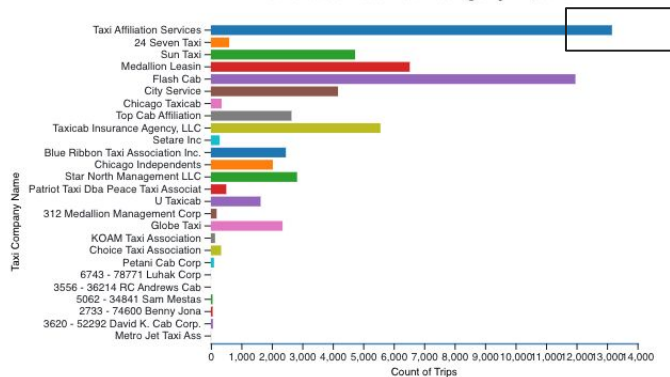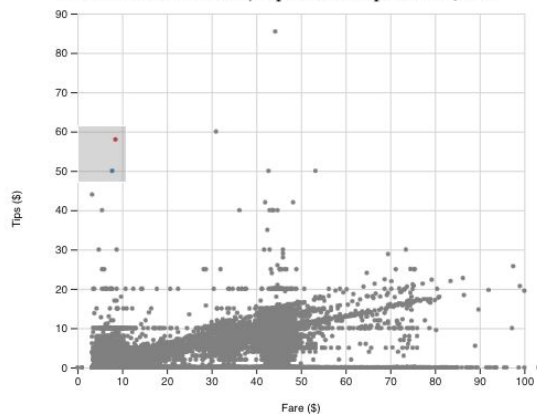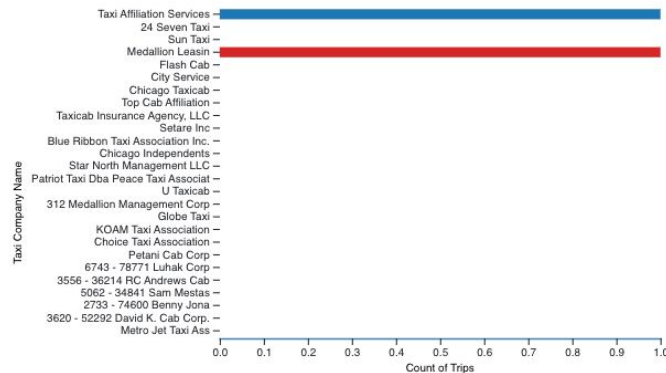
#3 The company with higher tips and lower fare:

Top Cab Affiliation

Two Linked Views of Trip Total and Company in June

Interactive Plot of Fare, Tips and Companies in June

Bar chart of each taxi company in June

#3 The company with highest trips:

Taxi Affiliation Service

Interactive Plot of Fare, Tips and Companies in June
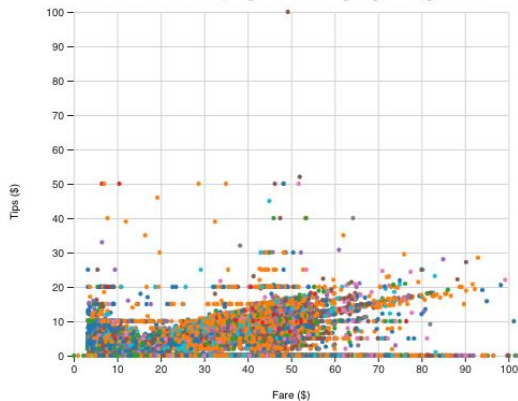

Bar chart of each taxi company in June

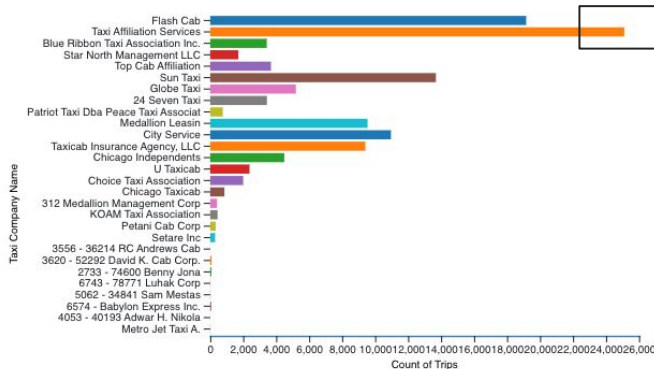#3 The company with higher tips and lower fare in June:

Taxi Affiliation Service, Medallion Leasin

Two Linked Views of Trip Total and Company in September

Interactive Plot of Fare, Tips and Company in September
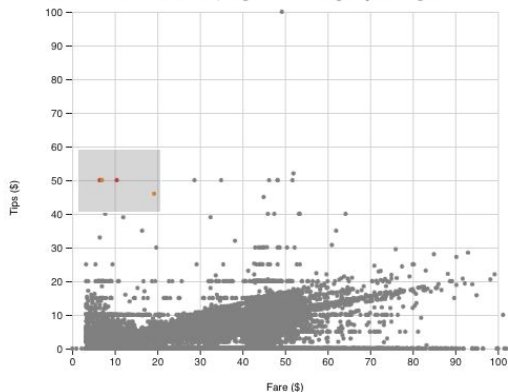

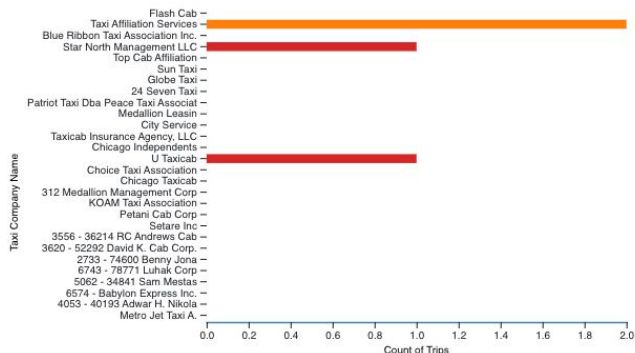Bar chart of each taxi company in September

#3 The company with highest trips:

Taxi Affiliation Service

Interactive Plot of Fare, Tips and Company in September

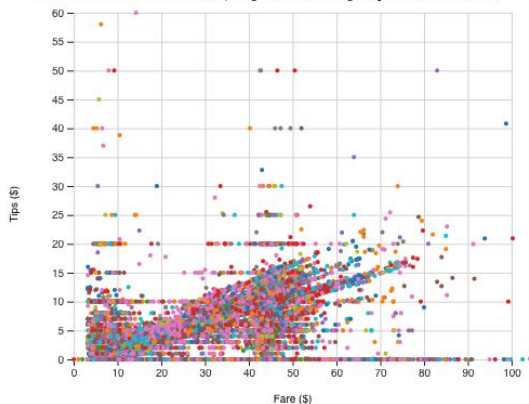Bar chart of each taxi company in September

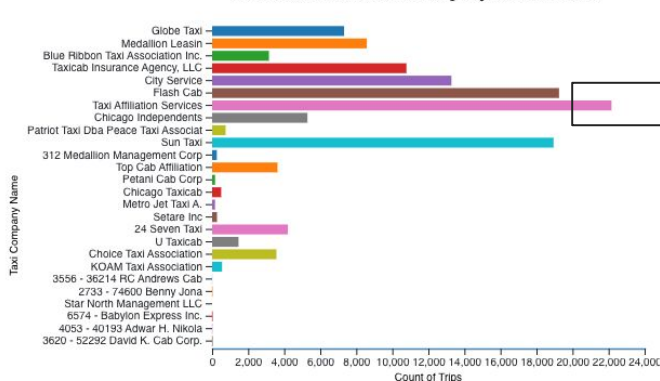#3 The company with higher tips and lower fare in September:

Taxi Affiliation Service

Two Linked Views of Trip Total and Company in December

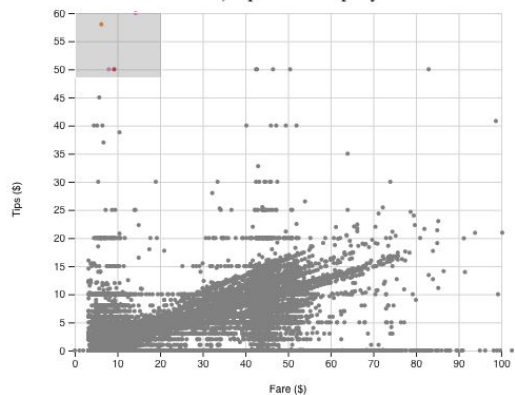Interactive Plot of Fare, Tips and Company in December
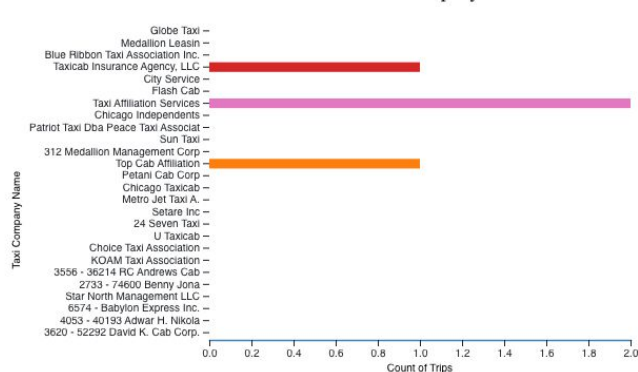
Bar chart of each taxi company in December

#3 The company with highest trips:

Taxi Affiliation Service

Interactive Plot of Fare, Tips and Company in December

Bar chart of each taxi company in December

#3 The company with higher tips and lower fare in September:

Taxi Affiliation Service

Conclusion

- #1 October and December have higher number of Taxi Trips and most rider will tip around $2 - $4 in 2021

- #2 Compare taxi trips in March, June, September, and December in 2021, Taxi Affiliation Service has more trips and favorable fare than other companies

- #3 Compare taxi trips in March, June, September, and December in 2021, Taxi Affillian Service also has better service than other companies

TAXI