



Bike Share Availability Prediction in London





About Me

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Mada and Flinders University in International Relations

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01 Background



Background

- As London is the center of business hub and the place of Central Government in United Kingdom, it becomes one of the busiest city in the world. People moves from places to places with public transport which sometimes can be overcrowded. In 2008 the Mayor of London came up with an idea to introduce bike share scheme in which to provide another type of transportation for the people of London with accessibility to public transport.
- Bike share is a public bike hire scheme where people can hire the bike with an application from the bike dock or a dockless bike and it cost very little. Making people easily access the bike to move from places to places.

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Problems and Goals



Problems and Goals

- With the government encouraging people to using bike share and the demand of bike share keep going up, it can lead to the absence of bike that available for rent
- The emergence of another bike share company which people would choose if the bike's company is not available can led to potential loss of a consument
- Exploring data to find in which time between 2015 - 2017 is the busiest, based on the hour, day, month, weather, season, wind speed, temperature and humidity.
- Create a machine learning to predict how many bikes the company needed per hour.

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The data that use in this project is from <https://www.kaggle.com/hmavrodiev/london-bike-sharing-data> set_ which the owner get from <https://cycling.data.tfl.gov.uk/>

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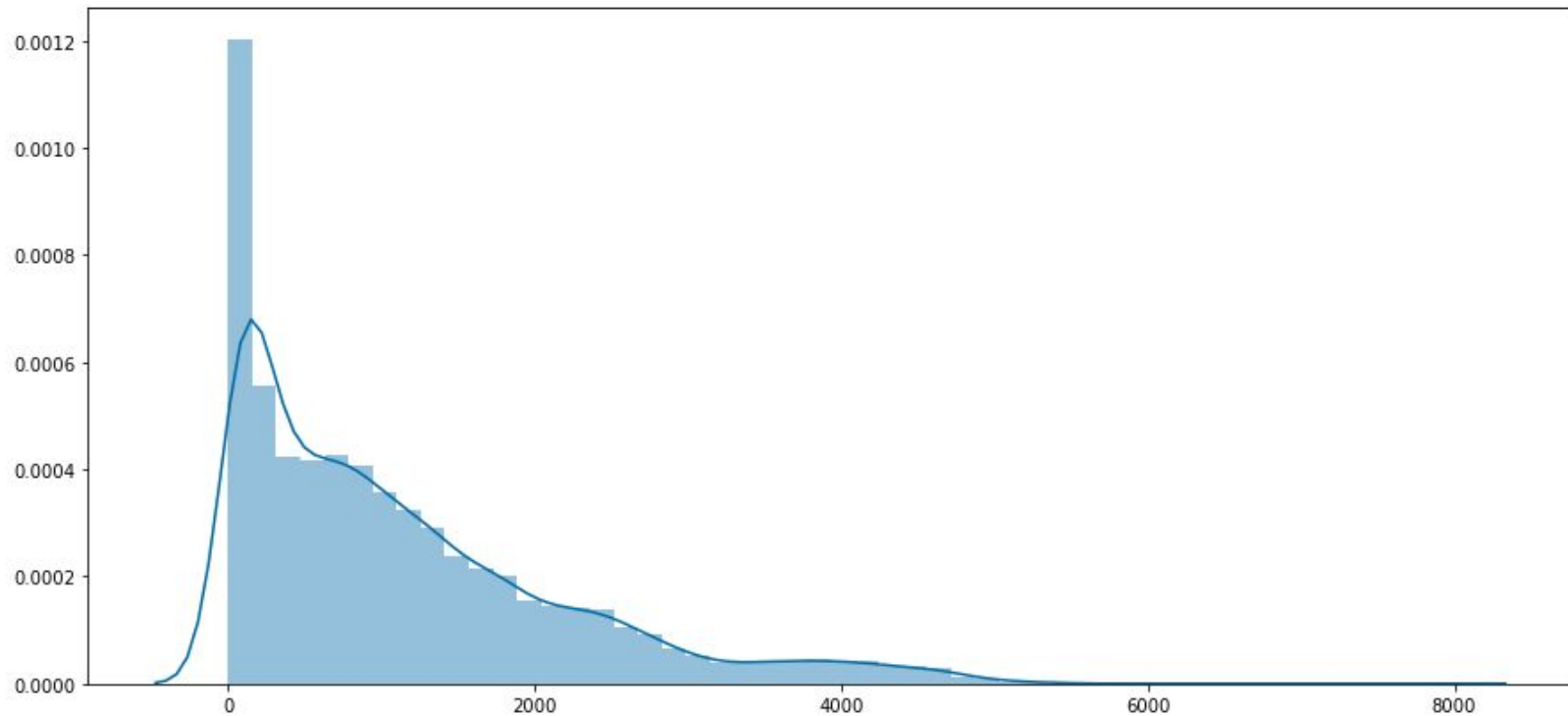
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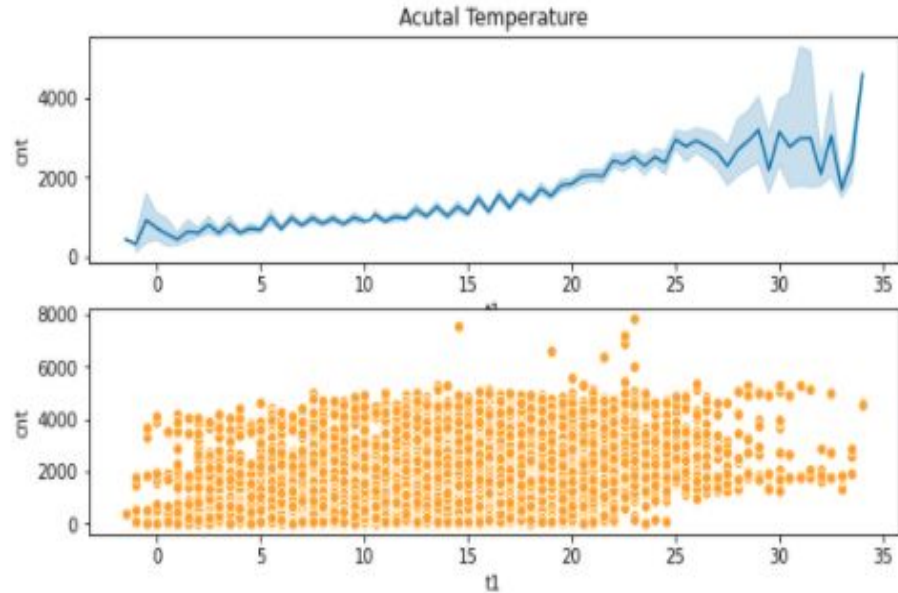
Data Analysis



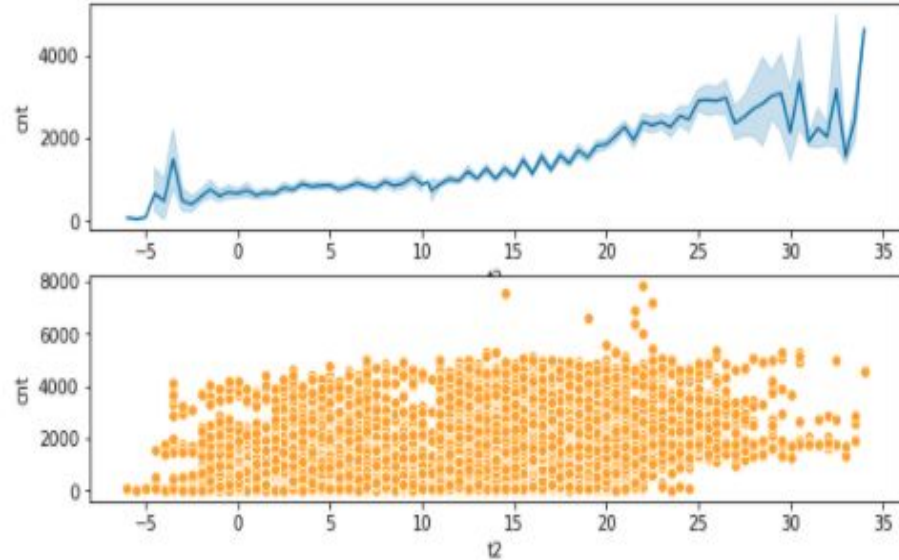
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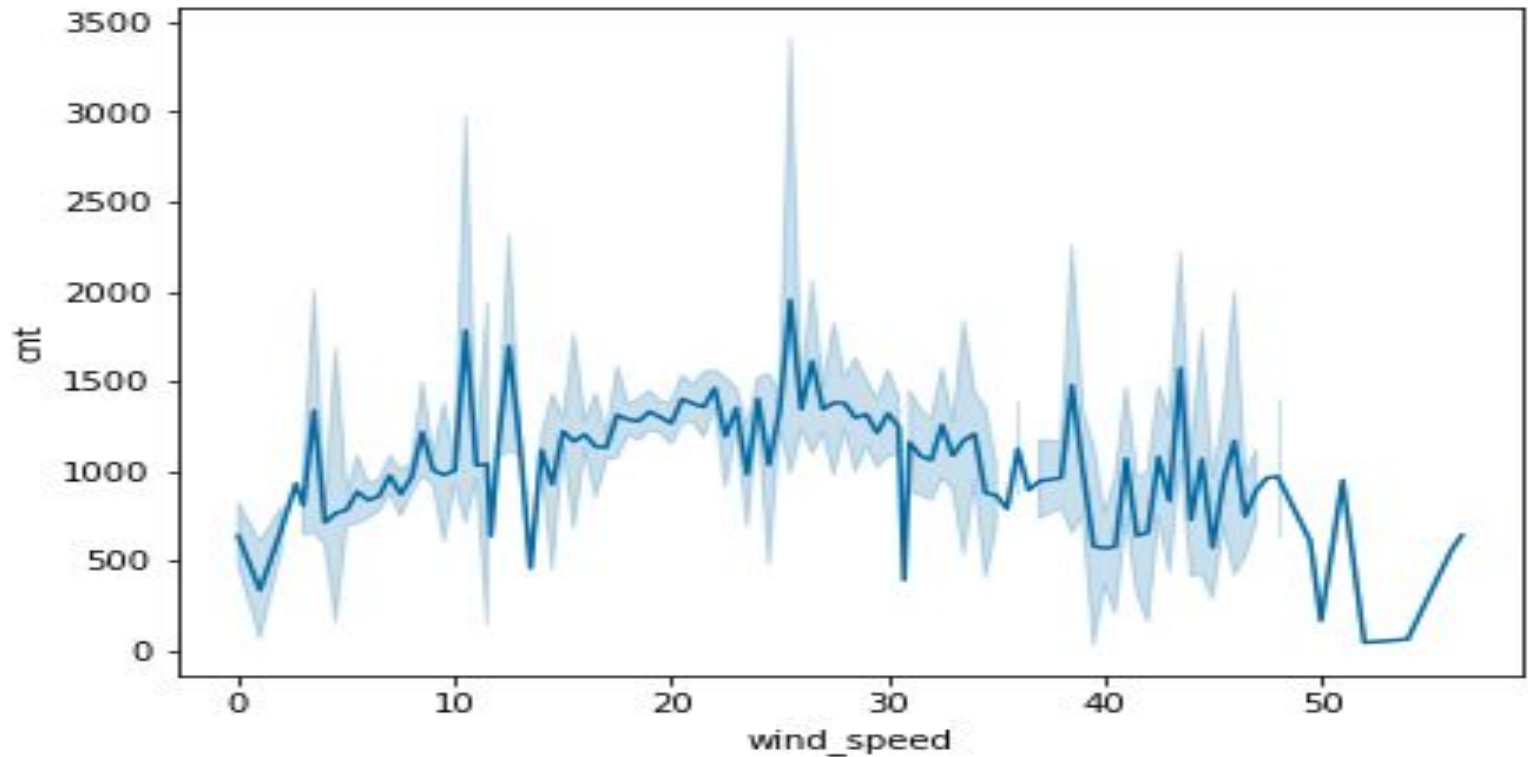
Bike Share by Actual Temperature



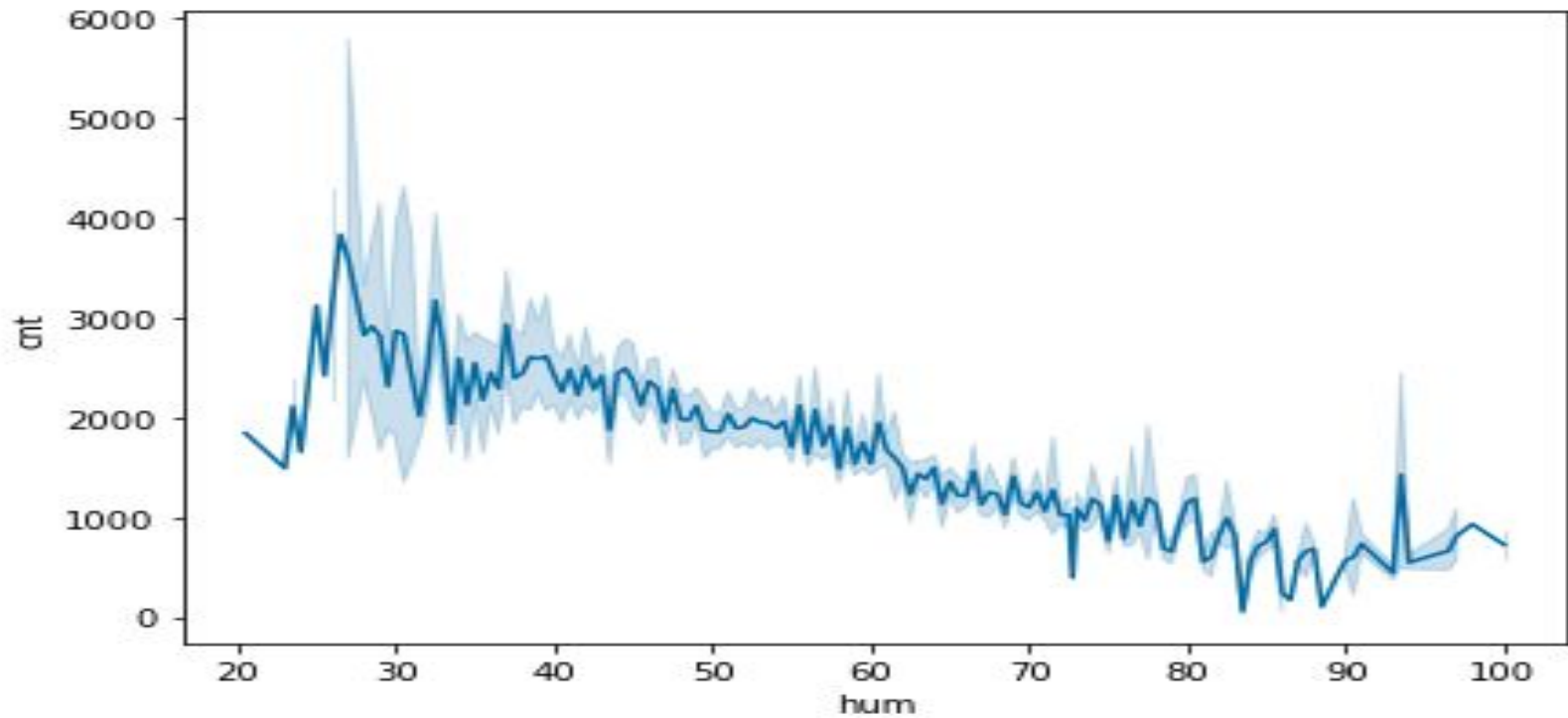
Bike Share by Feels Like



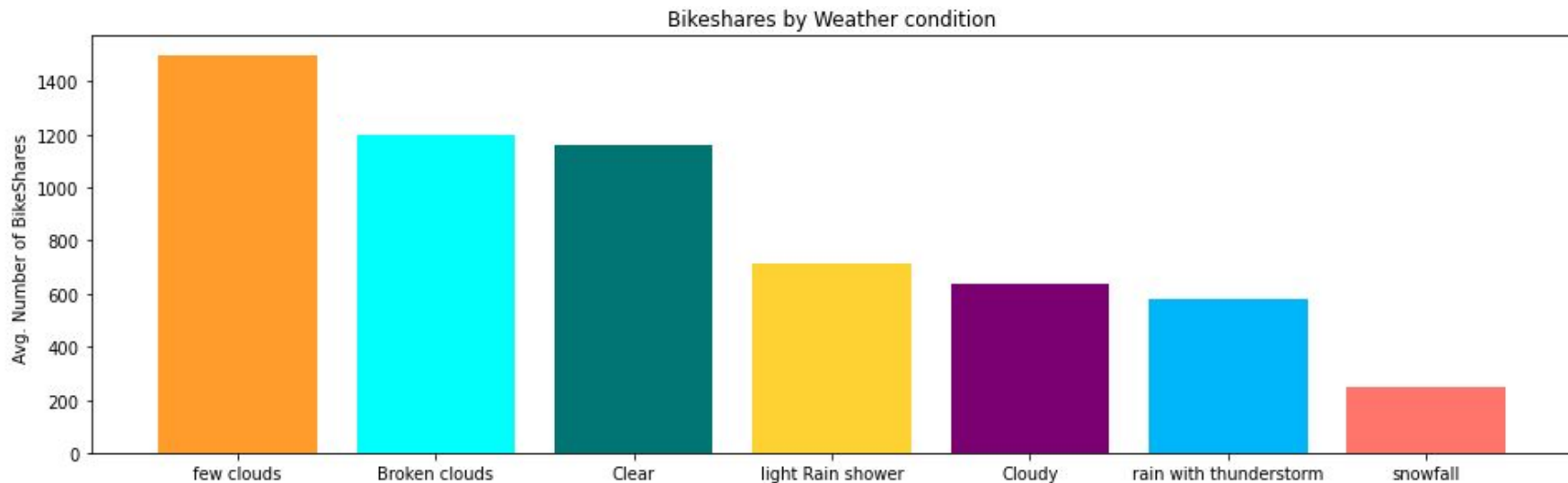
Bike Share by Wind Speed



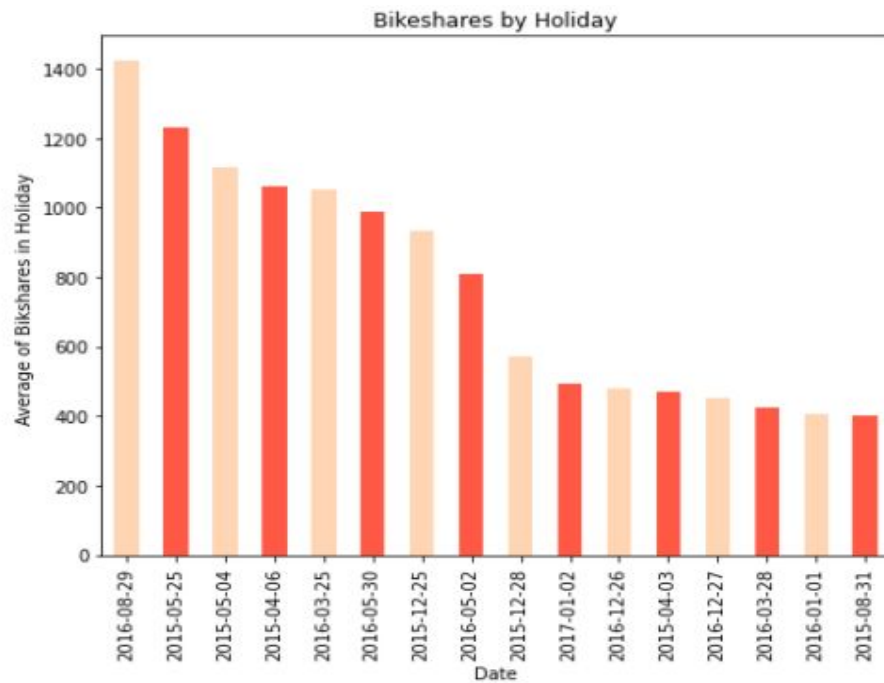
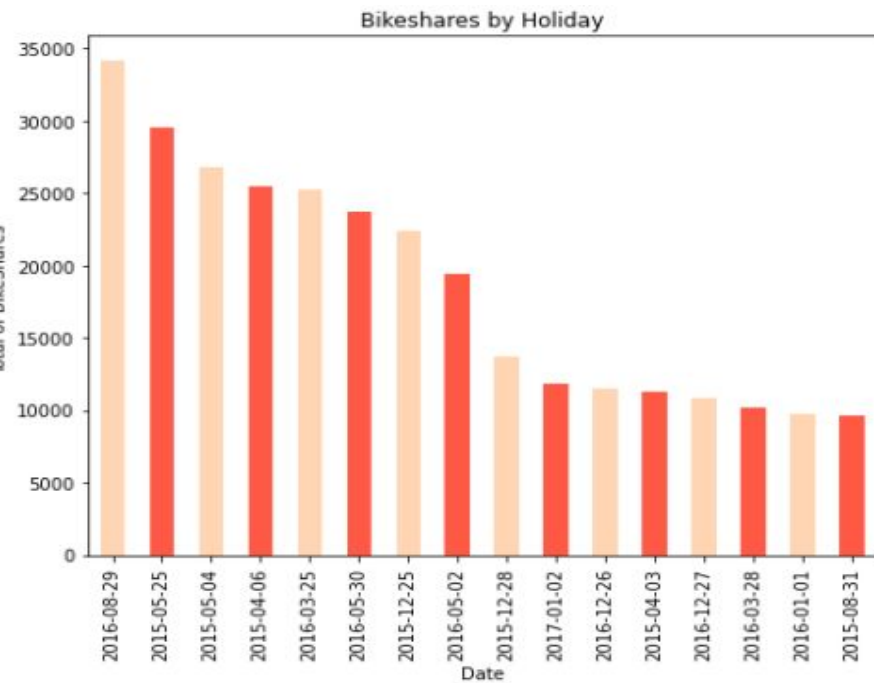
Bike Share by Humidity



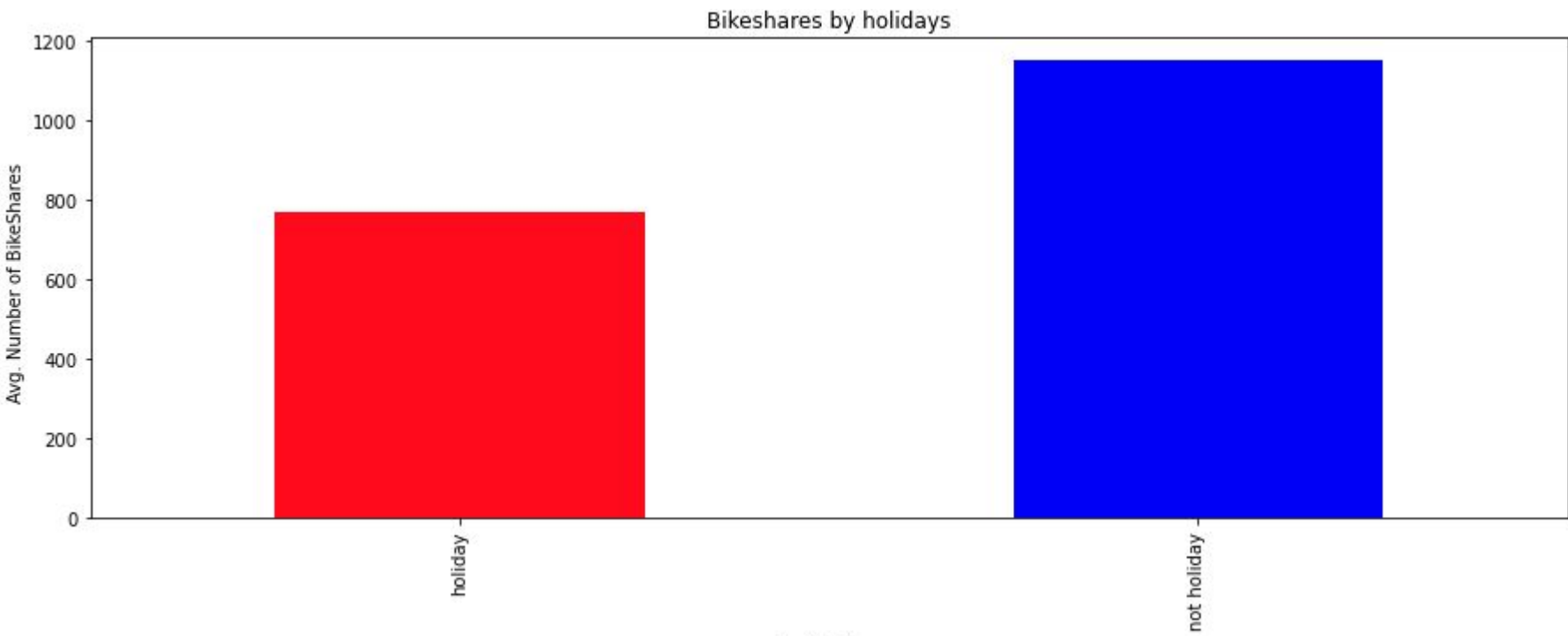
Bike Share by Weather



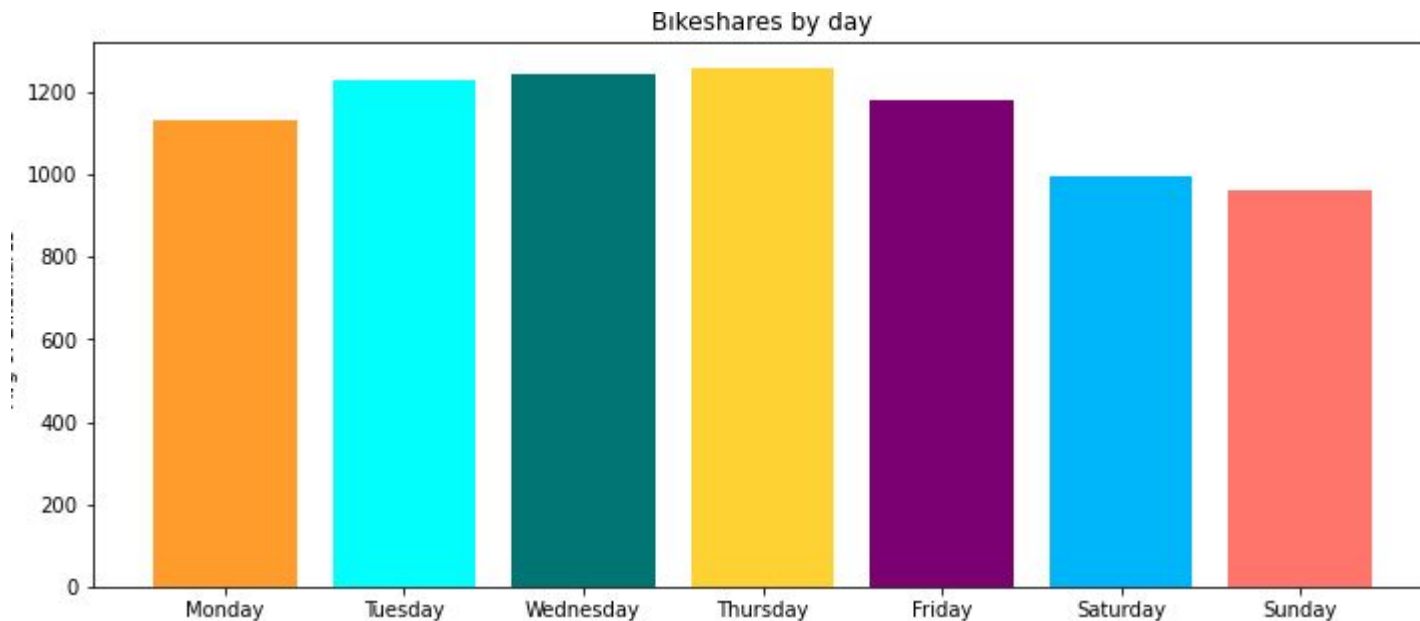
Bike share by holiday



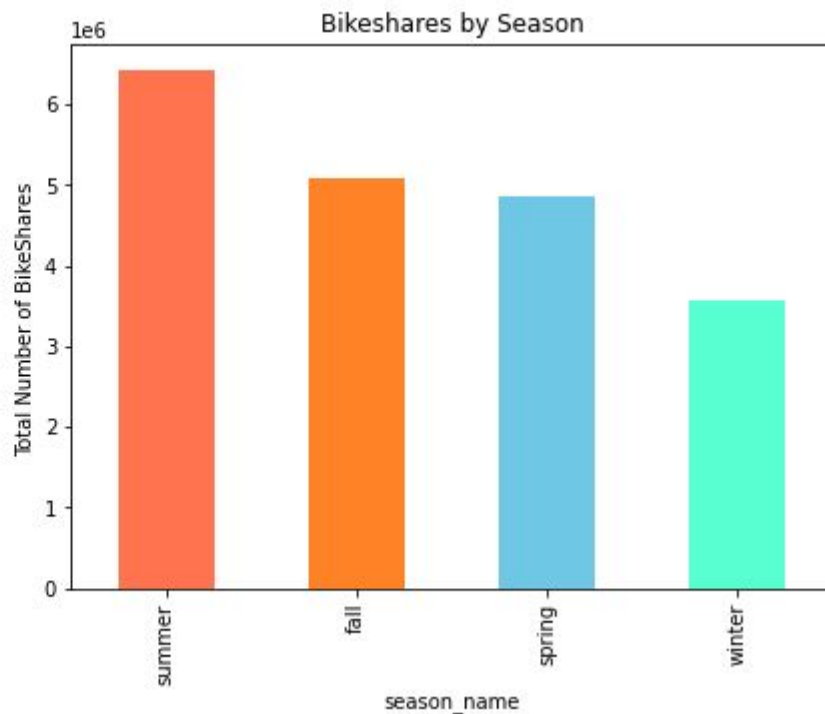
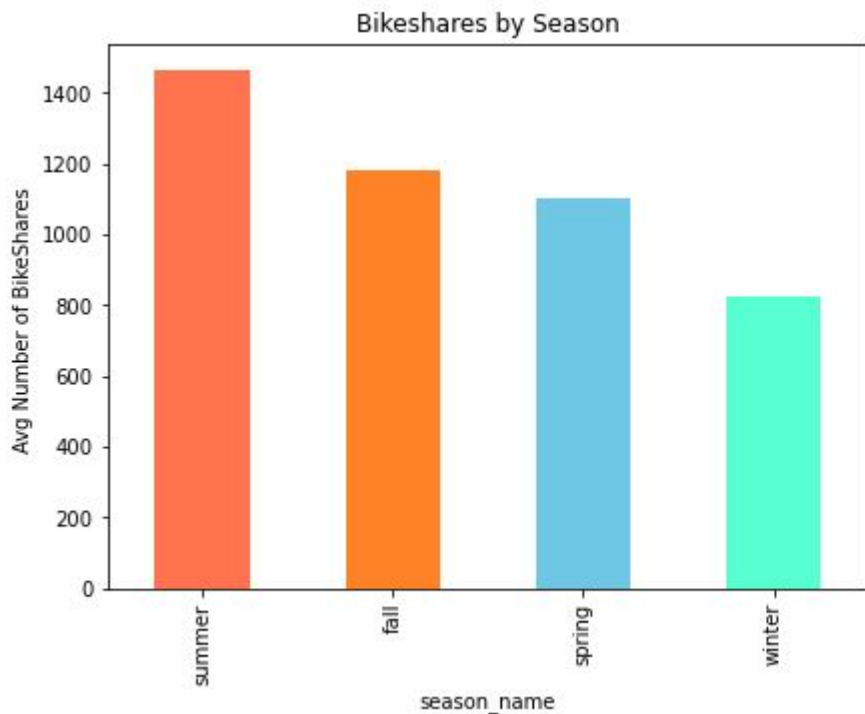
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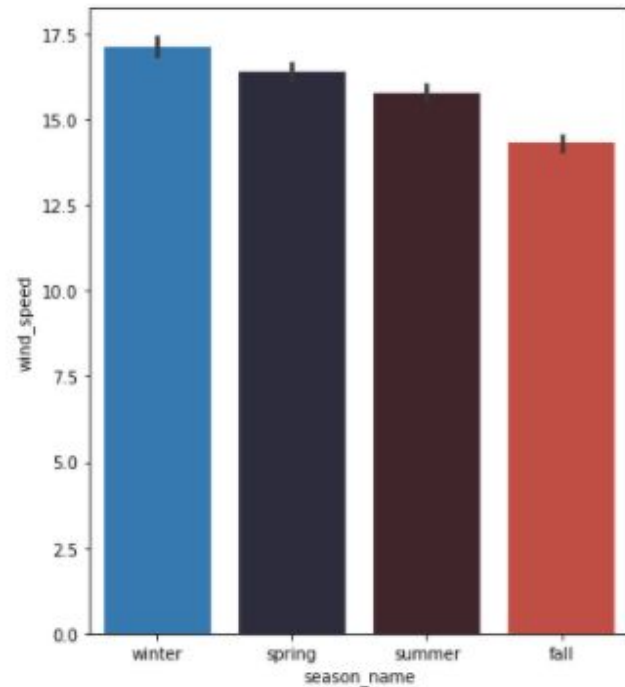
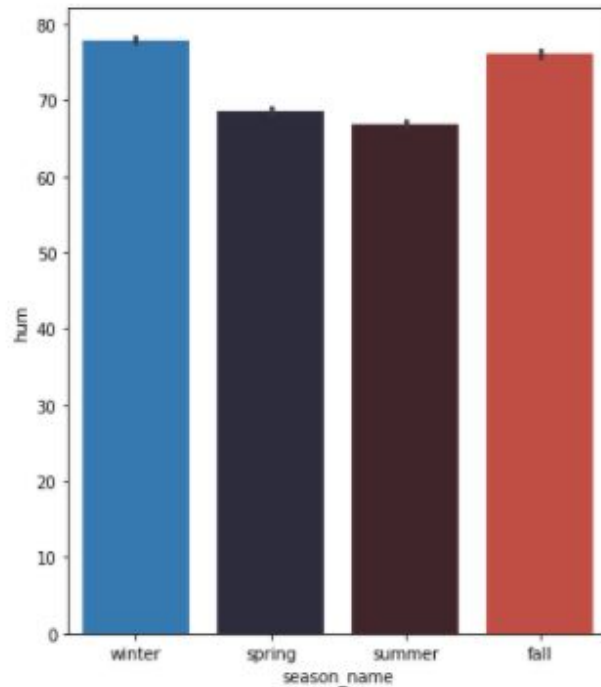
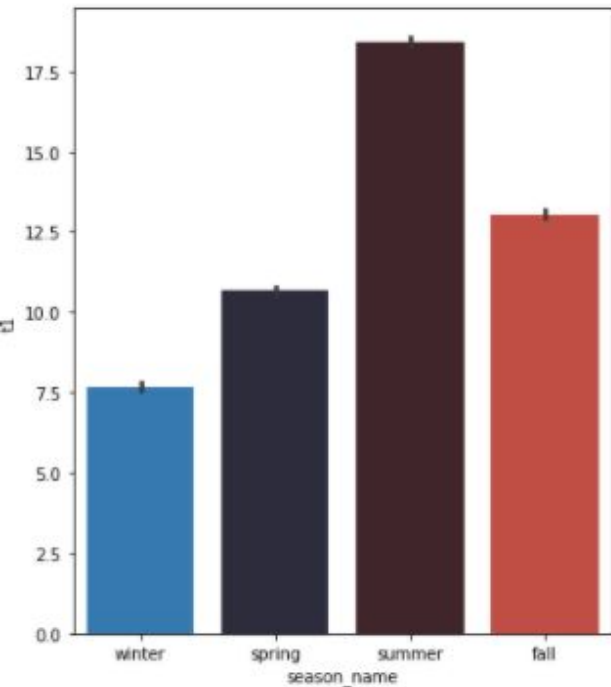
Bike Share by Day



Bike Share by Season

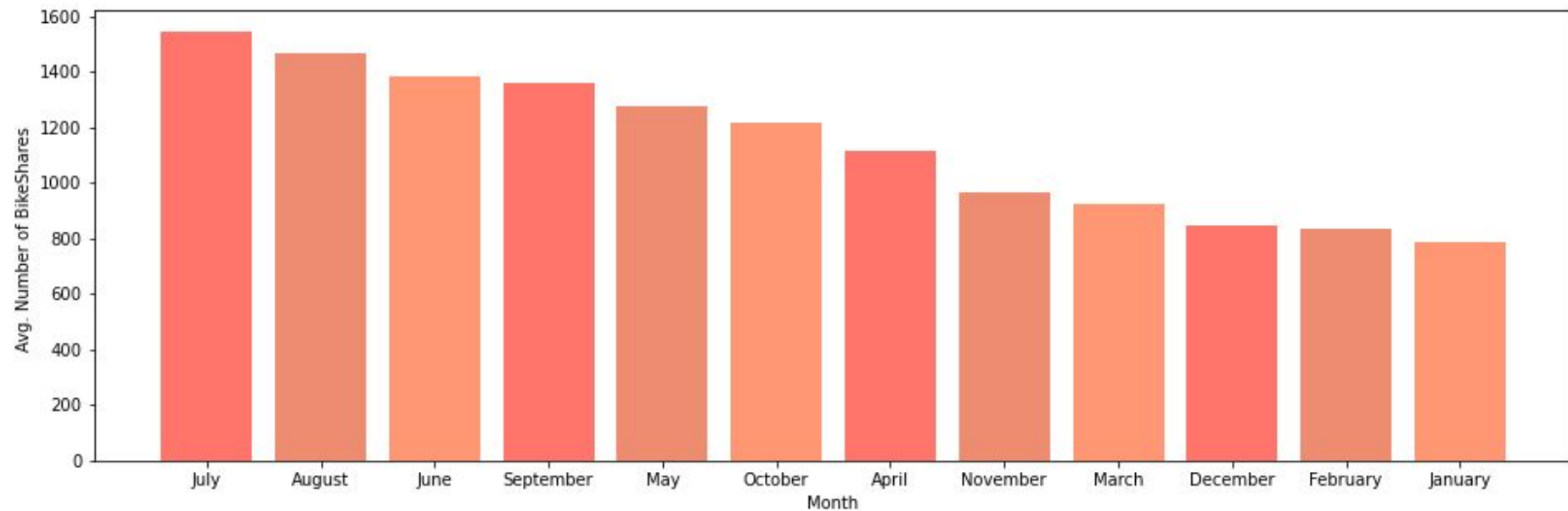


Analysis on why summer is the best season



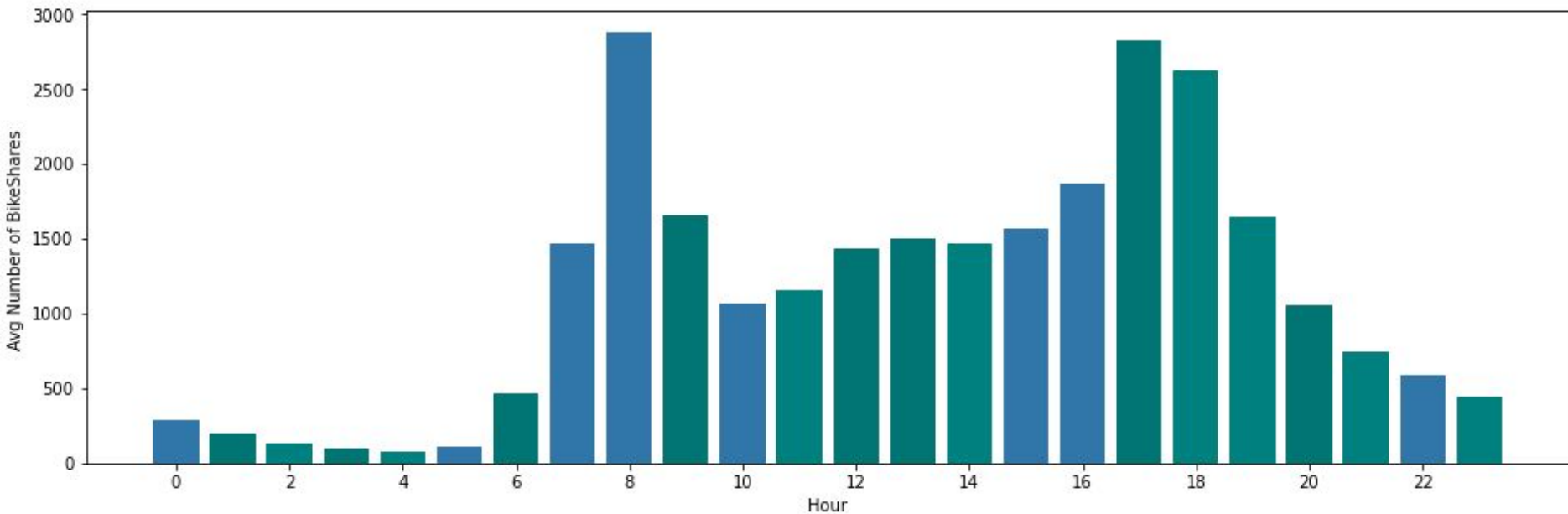
Bike Share by Month

Bikeshares by Month

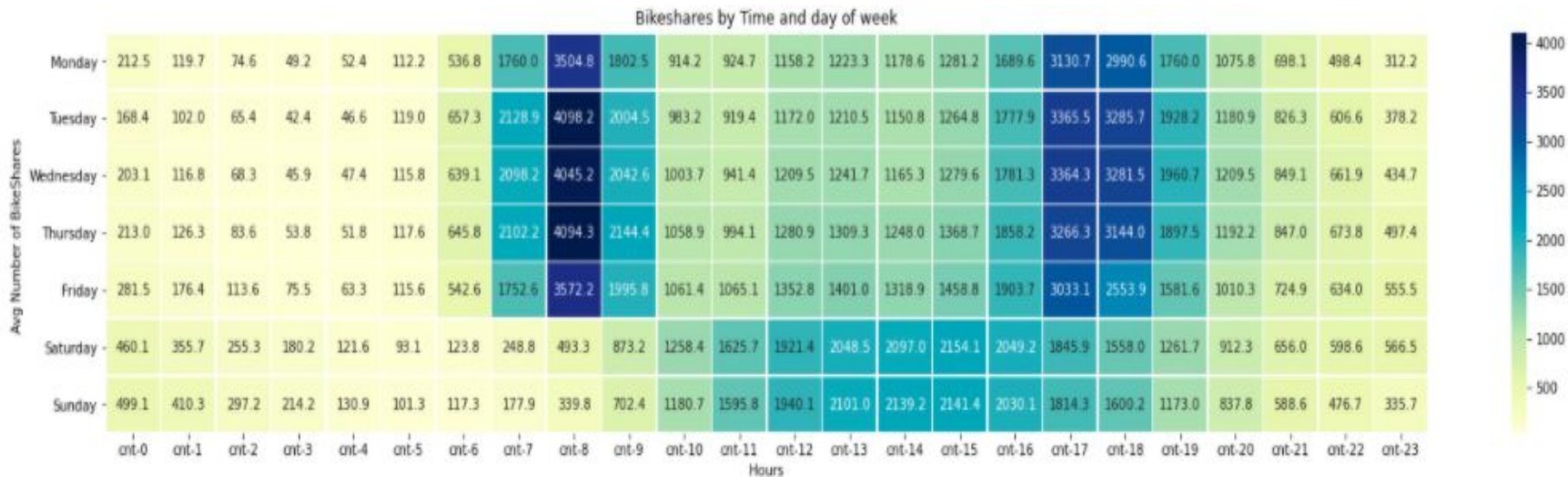


Bike Share per Hour

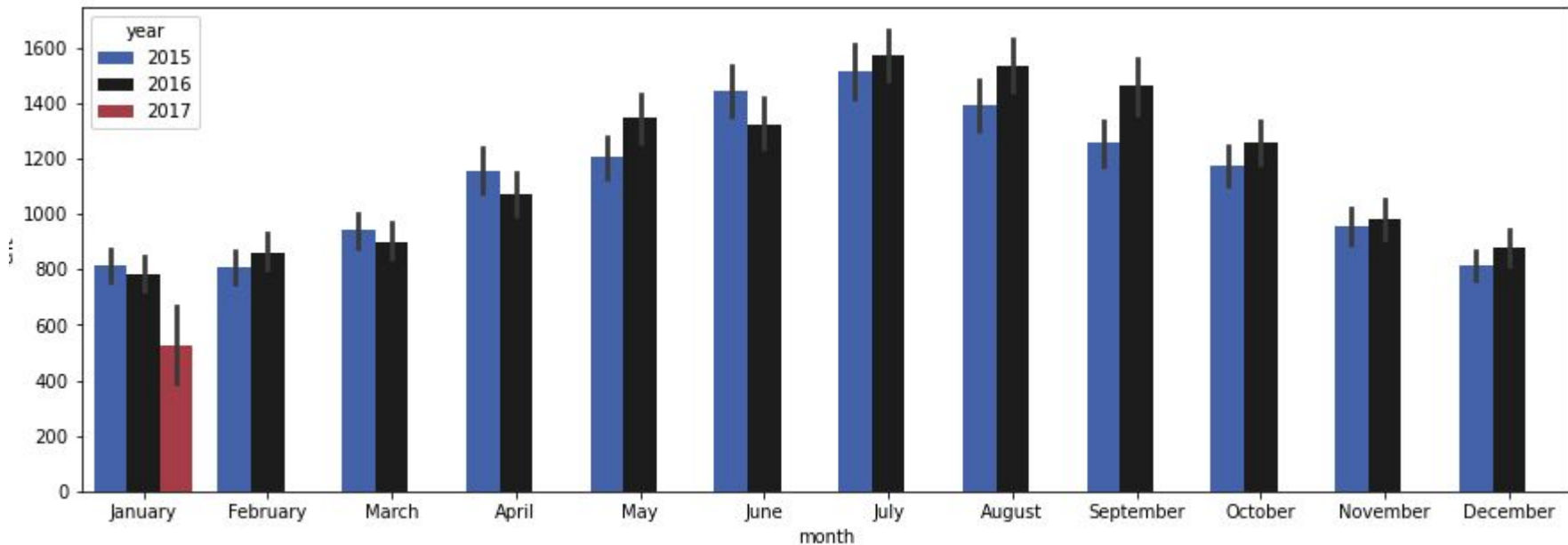
Bikeshares by Time



Bike Share by Time and Day



Bike Share per Year



Conclusion

- Based on the dataset according to count column which is the target shown that the Skewness is positive which mean the distribution is located on the highest value. In this case most of the bike share usage distribution have a low value and the mean is higher than median. Which shows that bike usage in London through 2015 - 2016 and early 2017 are lower than the average and several days the people hiring bike is very high



Analysis

- Based on the analysis the people like to ride bike in the warmer temperature, which around 15-20s degrees, as it is the ideal temperature to ride a bike and the London average temperature is around 17 degree celsius
- Few clouds, broken clouds and clear weather are where people like to use the bike share
- Weekdays are far busier than weekend and holiday, as people use the bike for commute
- The busiest time of people using bike share is at 8 o'clock and 17 o'clock where people go to work and going home
- Thursday is the most popular day for people to use bike share
- Summer is the most popular season for people to use bike share as the temperature in London is not that hot and cold, meaning that June, July and August are the most popular month for people to ride the bike share
- In 2016 most of the month have an increase in bike share usage
- Except, March, April and June. Where in June there was flood in London

Suggestion

- As weekday is very busy, especially in 8 in the morning and 5 in the evening, the company should provide more bike in this hour
- With summer become the most popular season the company should prepare more bike within period of June, July and August
- If the company want to do maintenance of the bike, suggesting do it in the weekend or holiday as it is not too busy for people to commute
- The company need to check on the daily weather, as there are several weather which people prefer to ride a bike
- Use the machine learning to make sure how many bike does the company needed in specific temperature, weather, day, month, hour, wind speed and humidity



Thanks

Do you have any questions?

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- <https://www.theguardian.com/cities/2019/feb/22/life-cycle-is-it-the-end-for-britains-dockless-bike-schemes>
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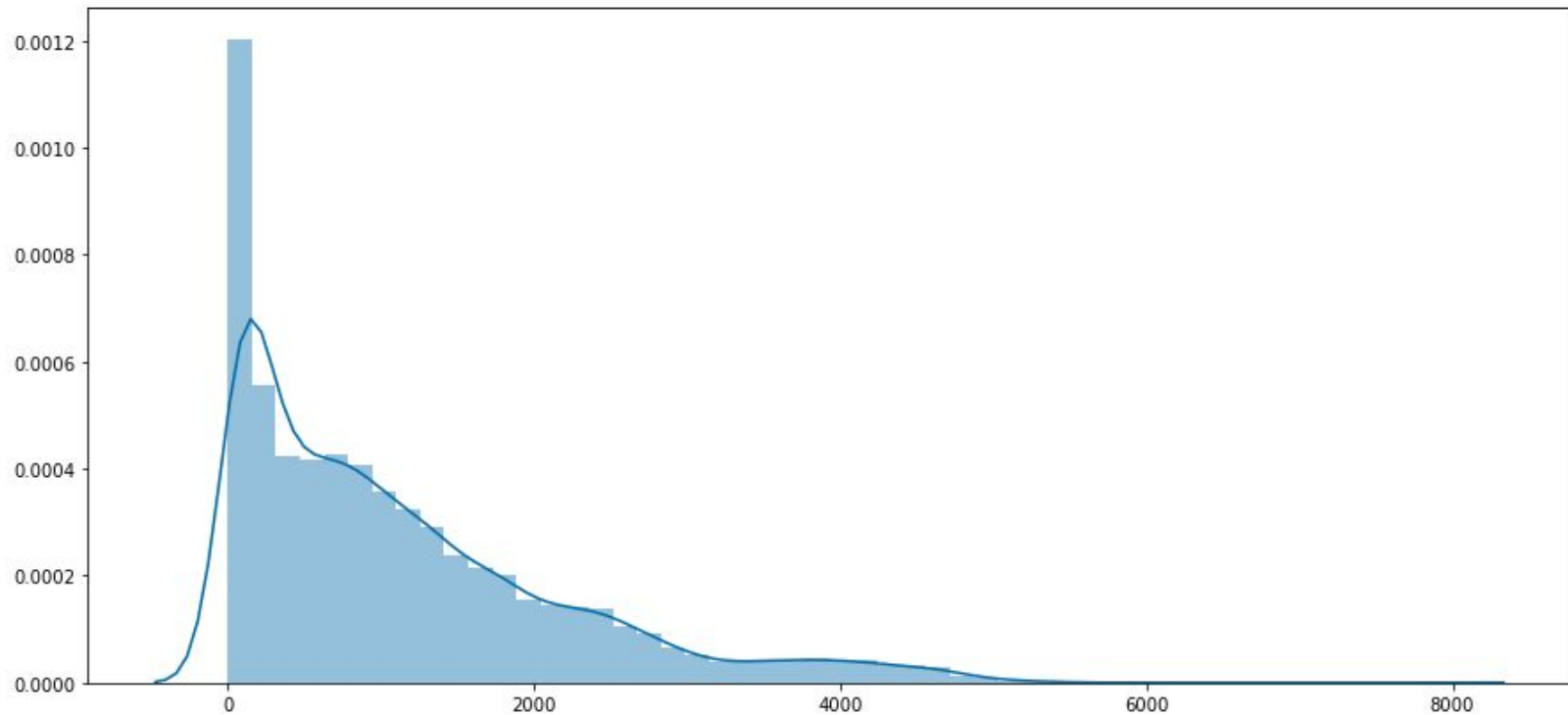
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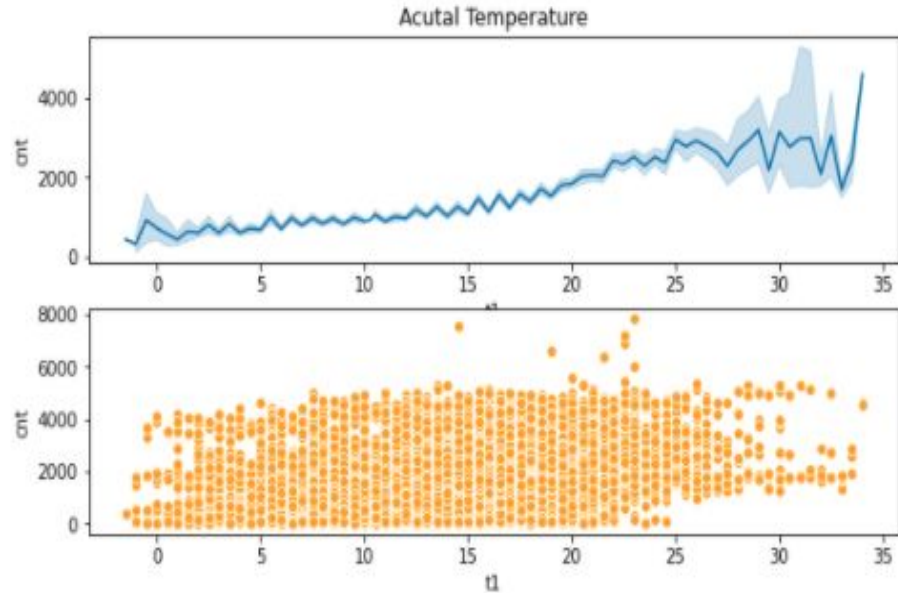
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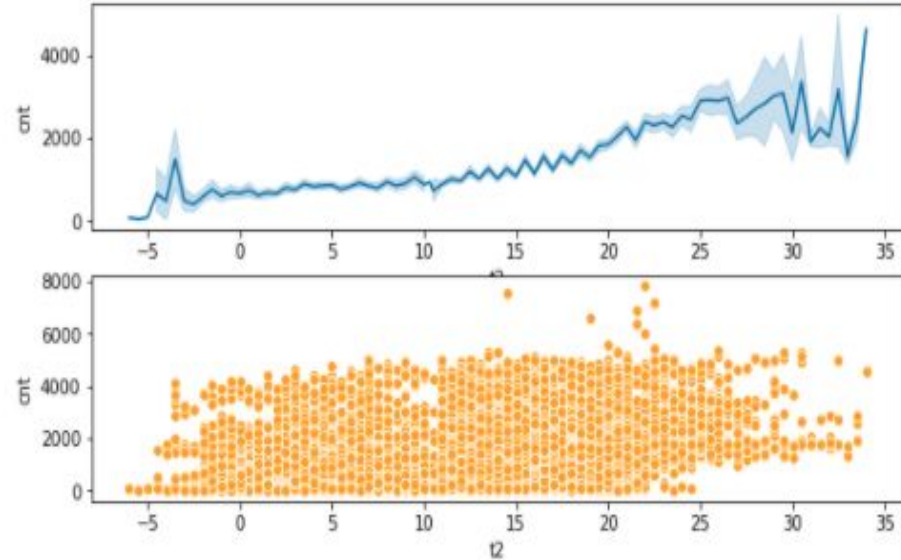
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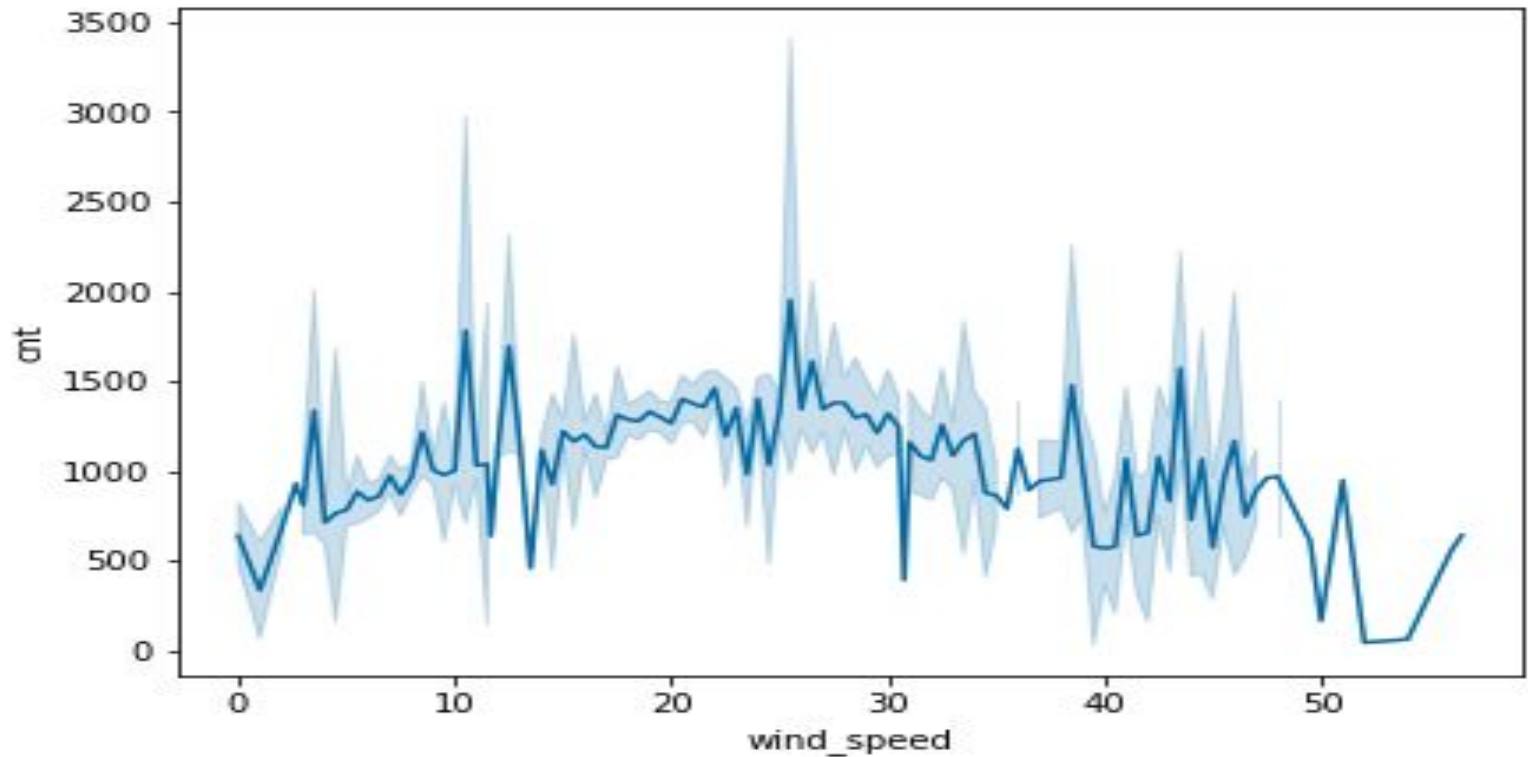
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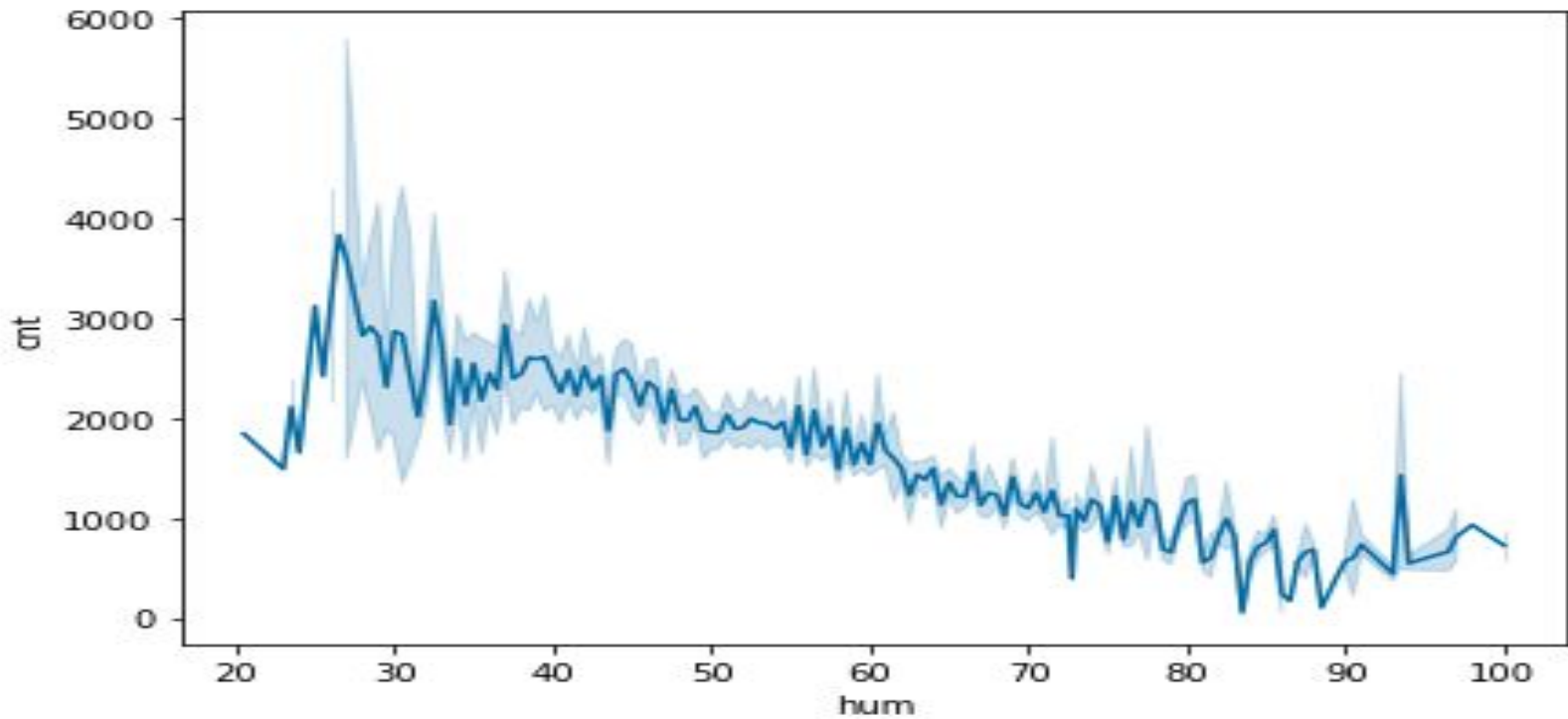
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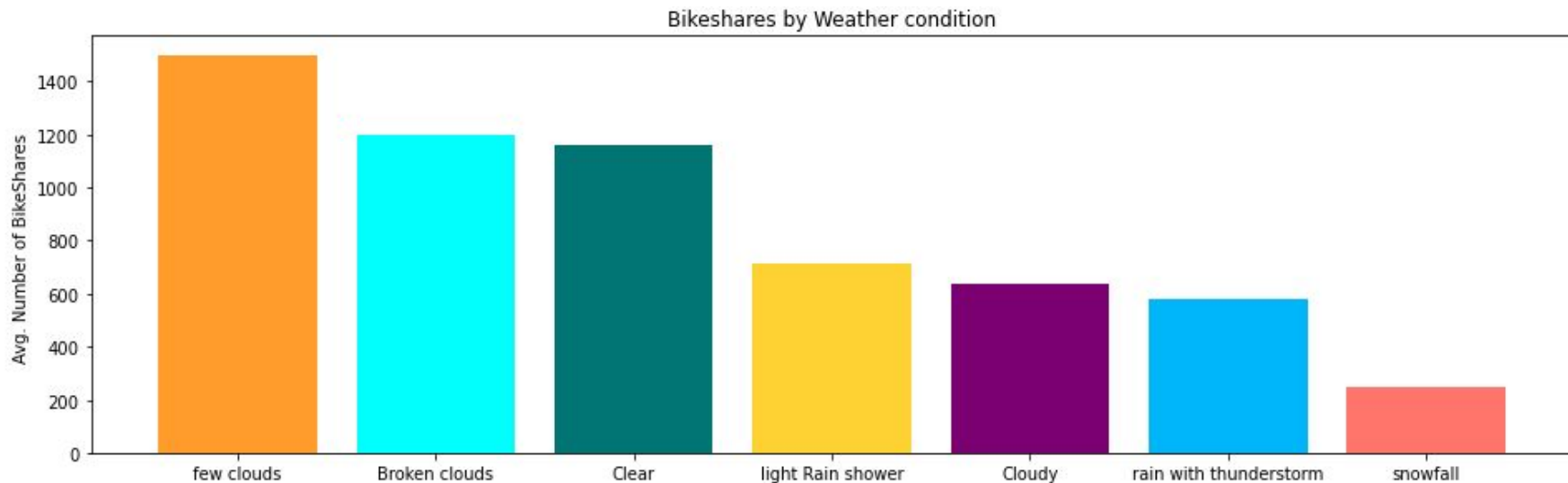
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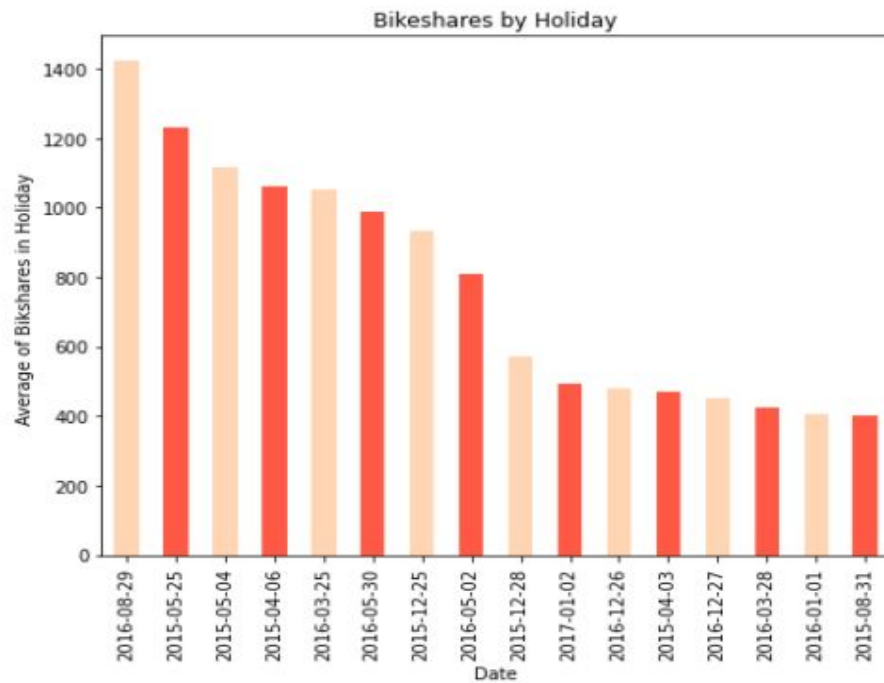
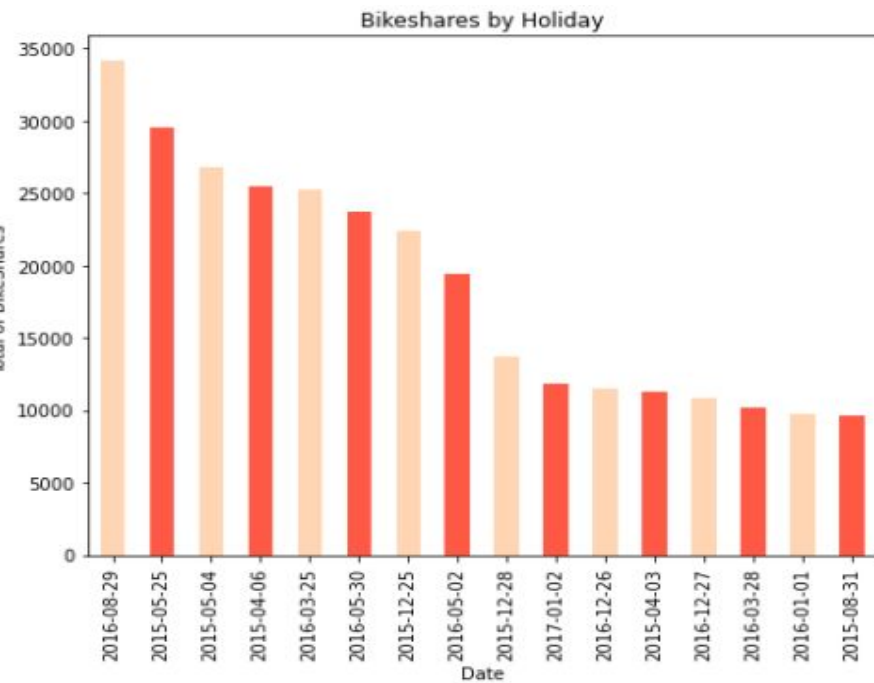
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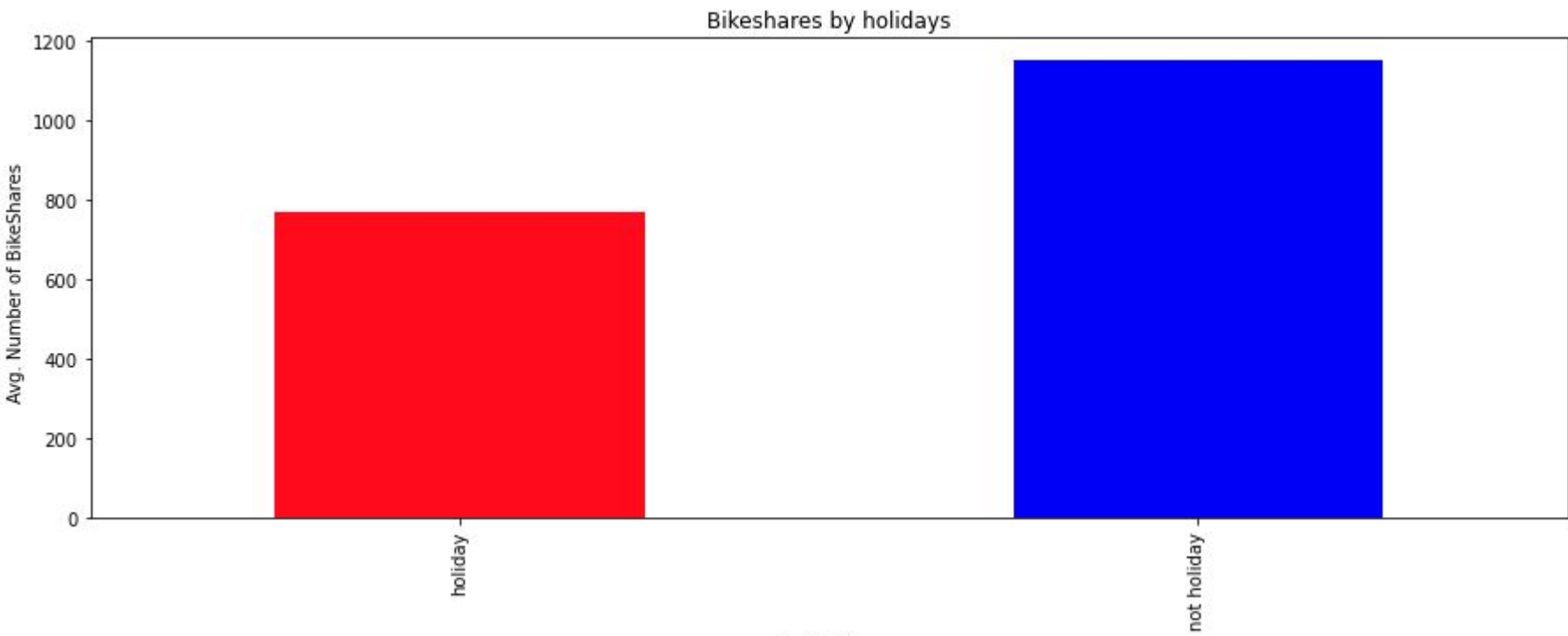
Bike Share by Weather



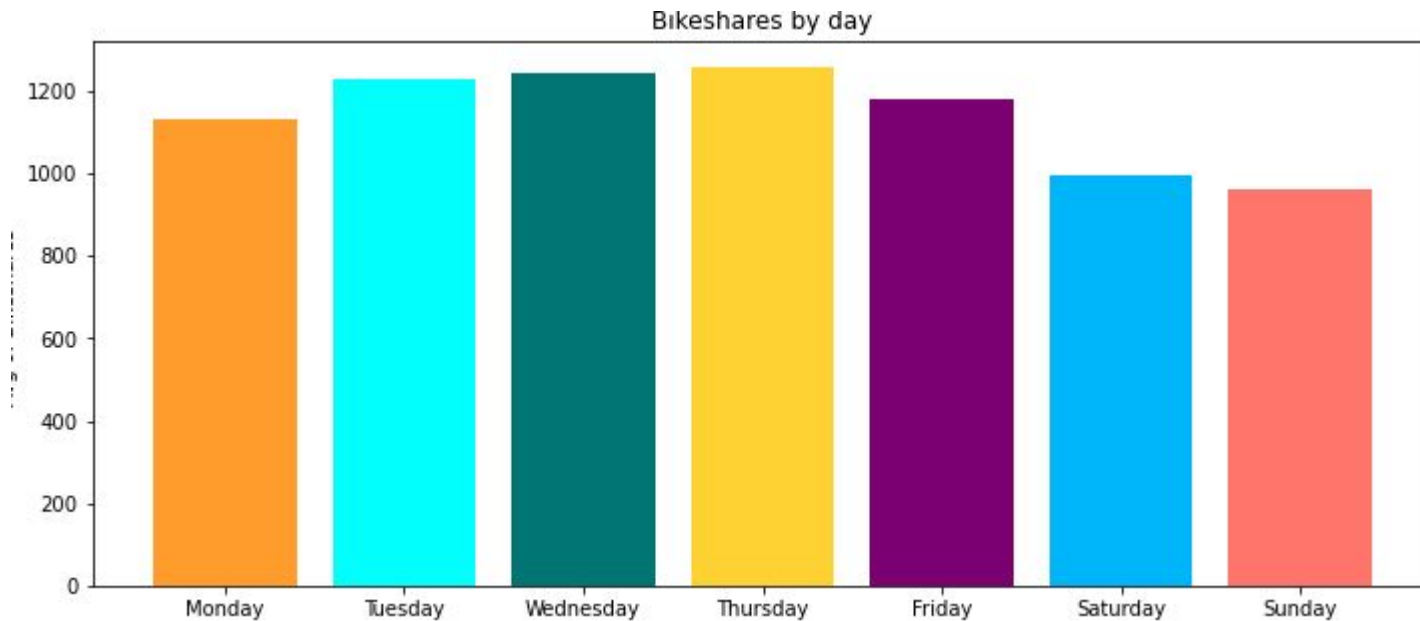
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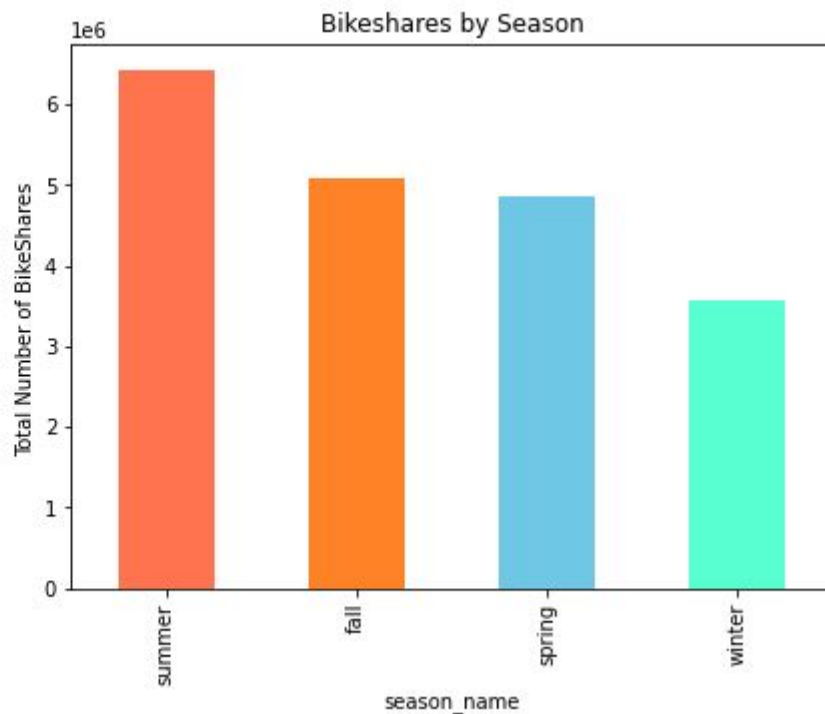
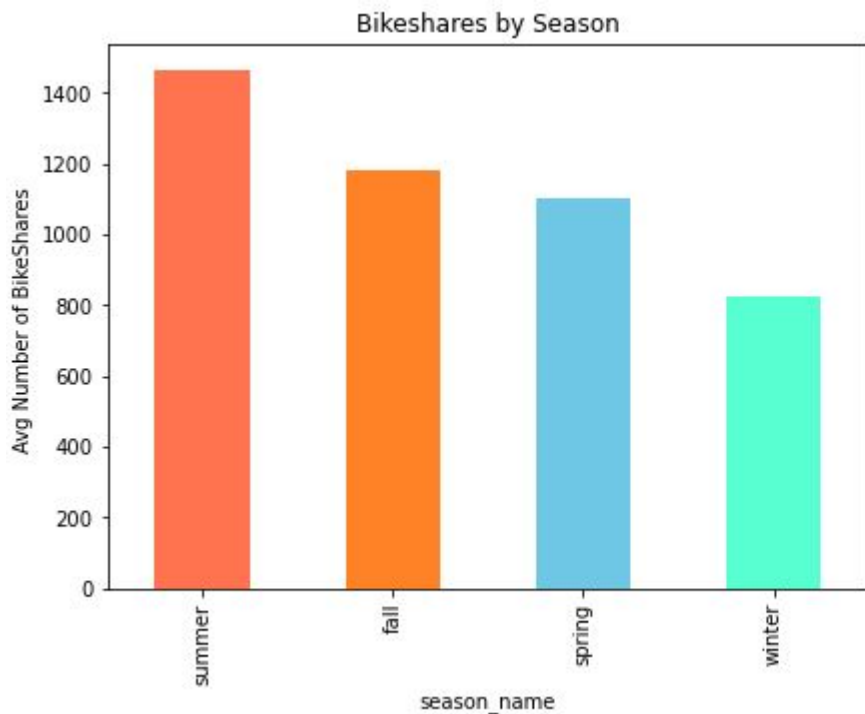
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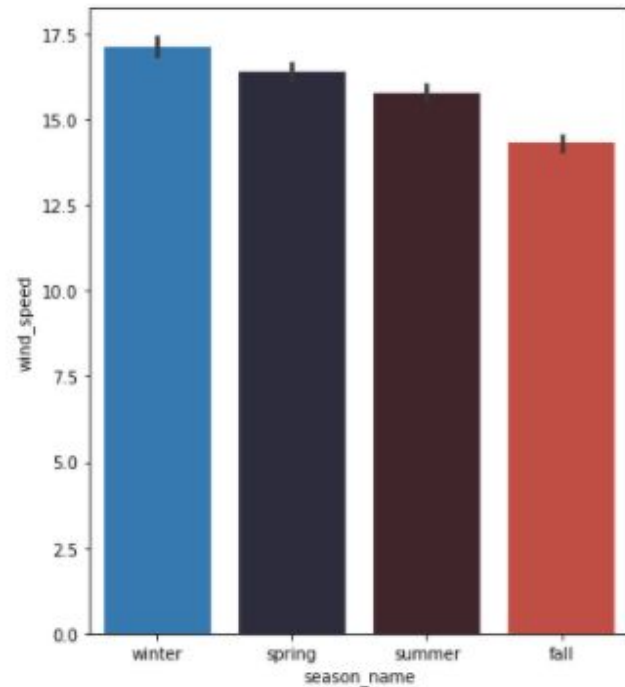
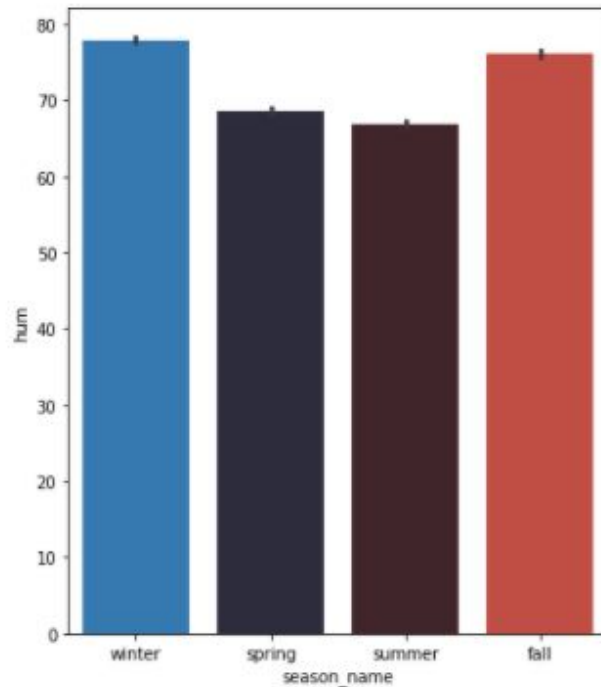
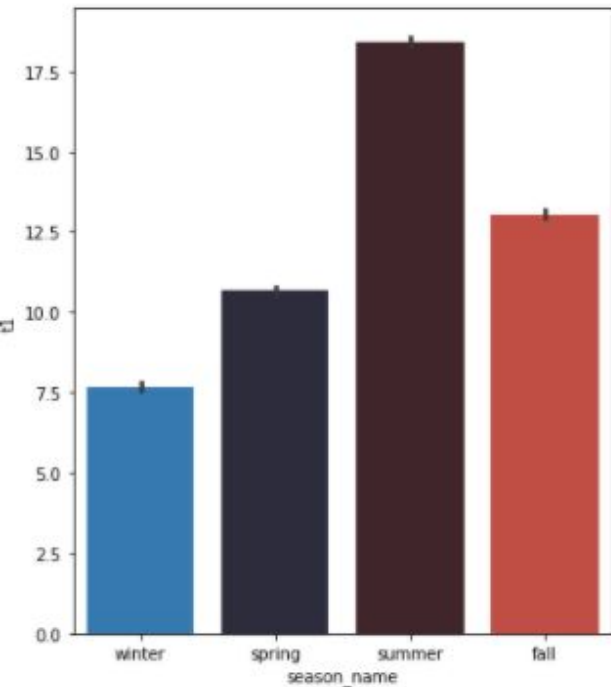
Bike Share by Day



Bike Share by Season

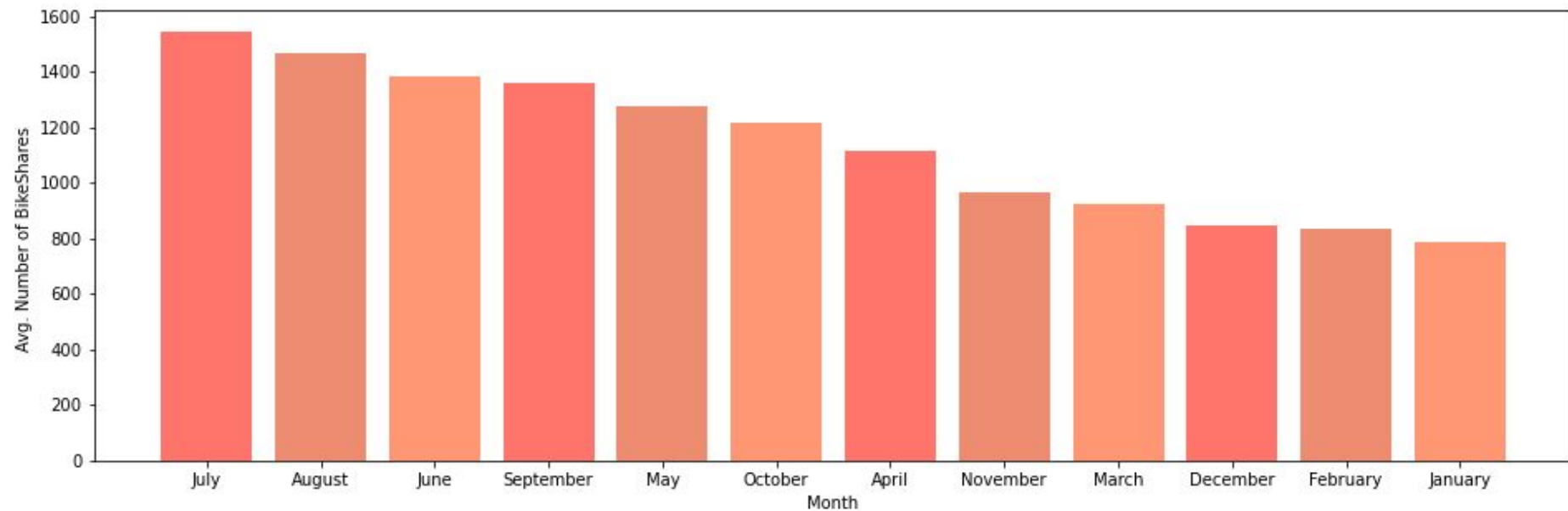


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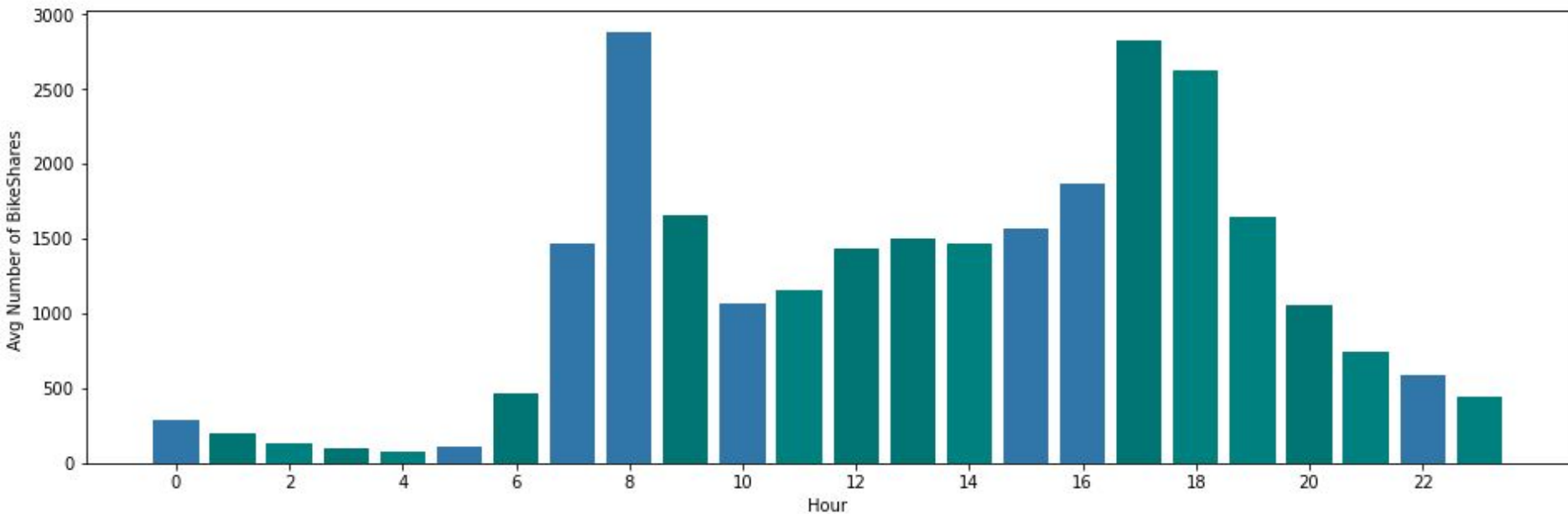
Bike Share by Month

Bikeshares by Month

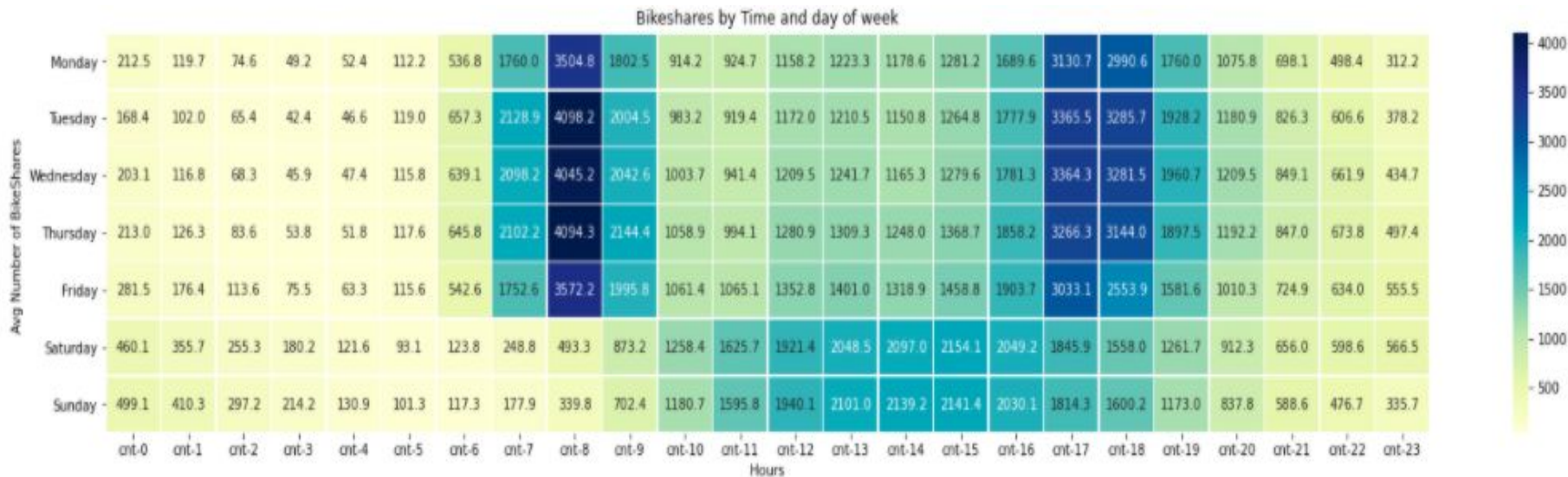


Bike Share per Hour

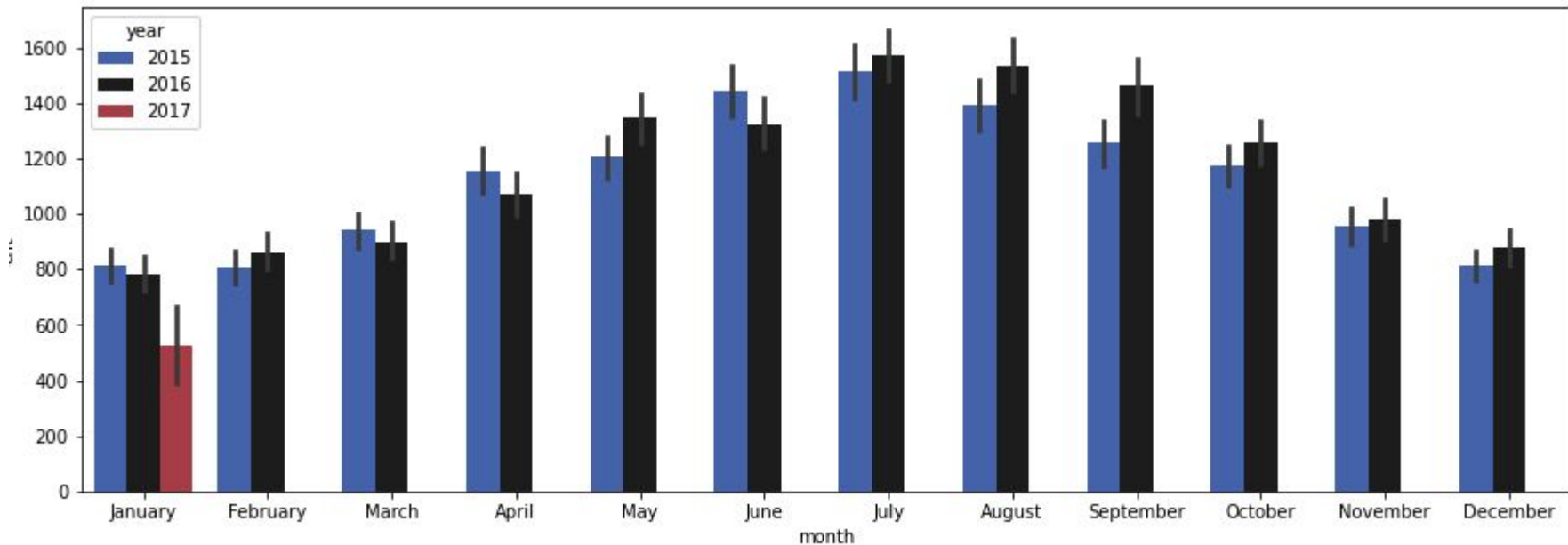
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