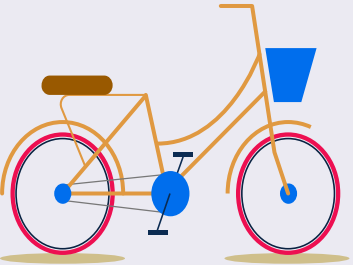
Bike sharing

Overview

Capital Bike Sharing dataset contains information related to the bike sharing program of Washington DC for the 2011 and 2012 years. To review the data set attributes, visit the data set page on UCI.



data!

The dataset contains 17 attributes , 17389 instances

Problem statements

For predict

Prediction of bike rental count hourly based on the environmental and seasonal sittings

For visualize

- Bike years highest season
- Top demand hours for. Bikes
- Humidity and temperature effect on bike rental

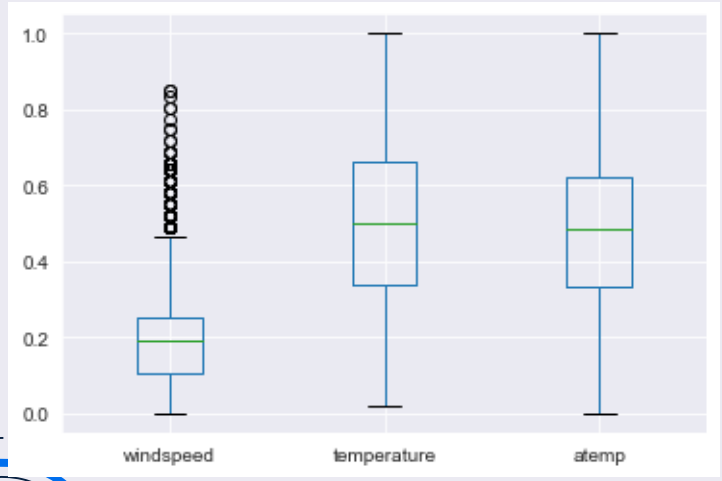
Data cleaning

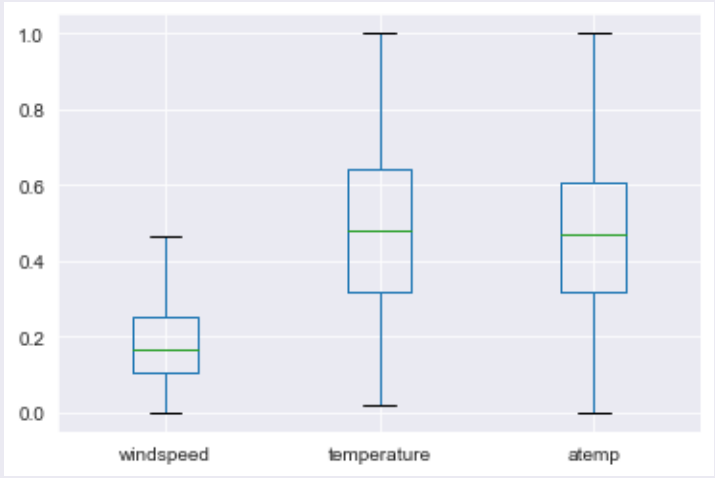
1. Check Missing & duplicate data
2. Check any outlier and handle it
3. Rename column
4. Check if have any inconsistent
5. Map data nice to visualize

Sample from dataset after cleaning

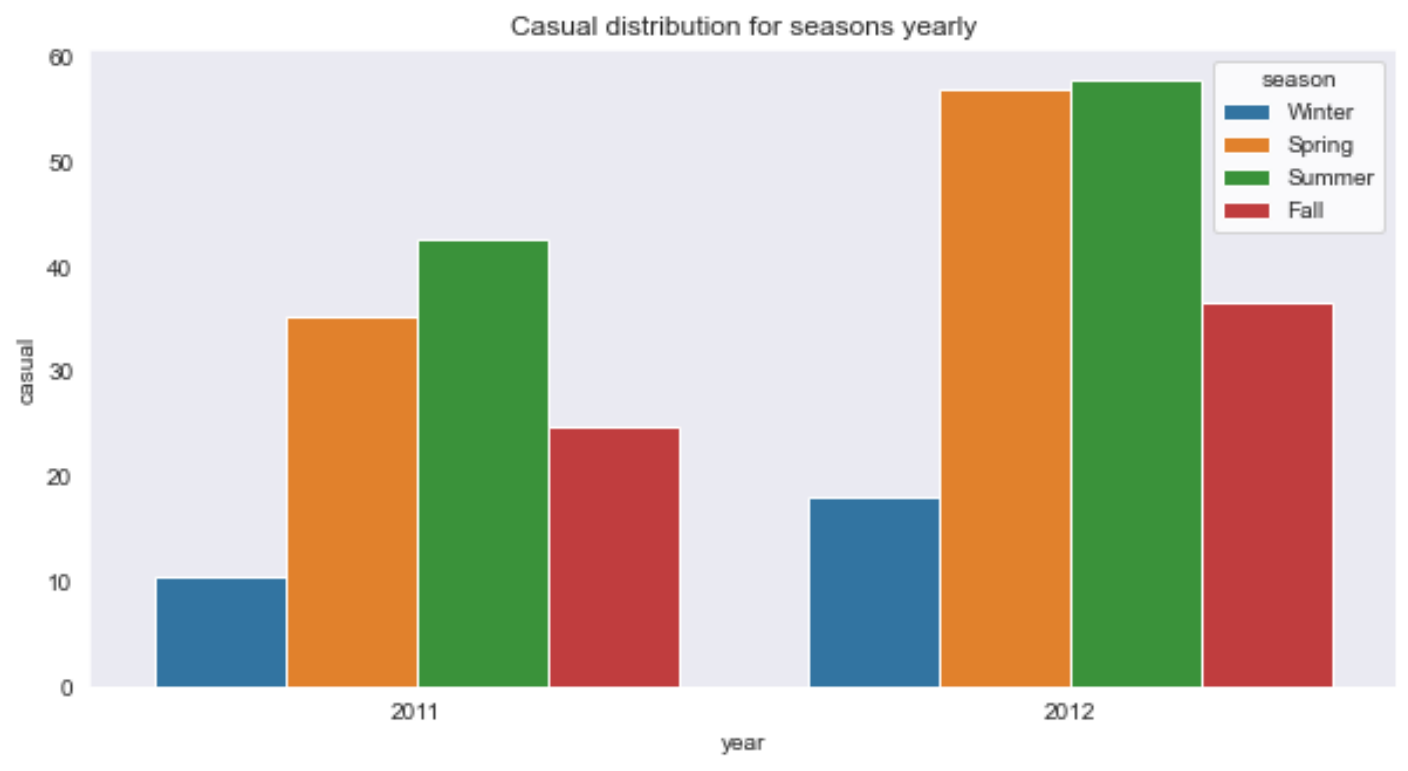
rec_id	datetime	season	year	month	hr	is_holiday	weekday	is_workingday	weather	temperature	atemp	humidity	windspeed	casual	registered
3288	2011-05-21	Spring	2011	5	21	No	Sunday	No	Clear	0.62	0.6061	0.61	0.1045	77	150
2103	2011-04-02	Spring	2011	4	11	No	Sunday	No	Cloudy	0.40	0.4091	0.47	0.1642	72	126
2664	2011-04-25	Spring	2011	4	21	No	Tuesday	Yes	Clear	0.62	0.6061	0.69	0.2537	41	149
1602	2011-03-12	Winter	2011	3	5	No	Sunday	No	Clear	0.22	0.2273	0.69	0.1940	0	2
7687	2011-11-21	Fall	2011	11	21	No	Tuesday	Yes	Rain	0.40	0.4091	0.87	0.1642	11	103

check outlier

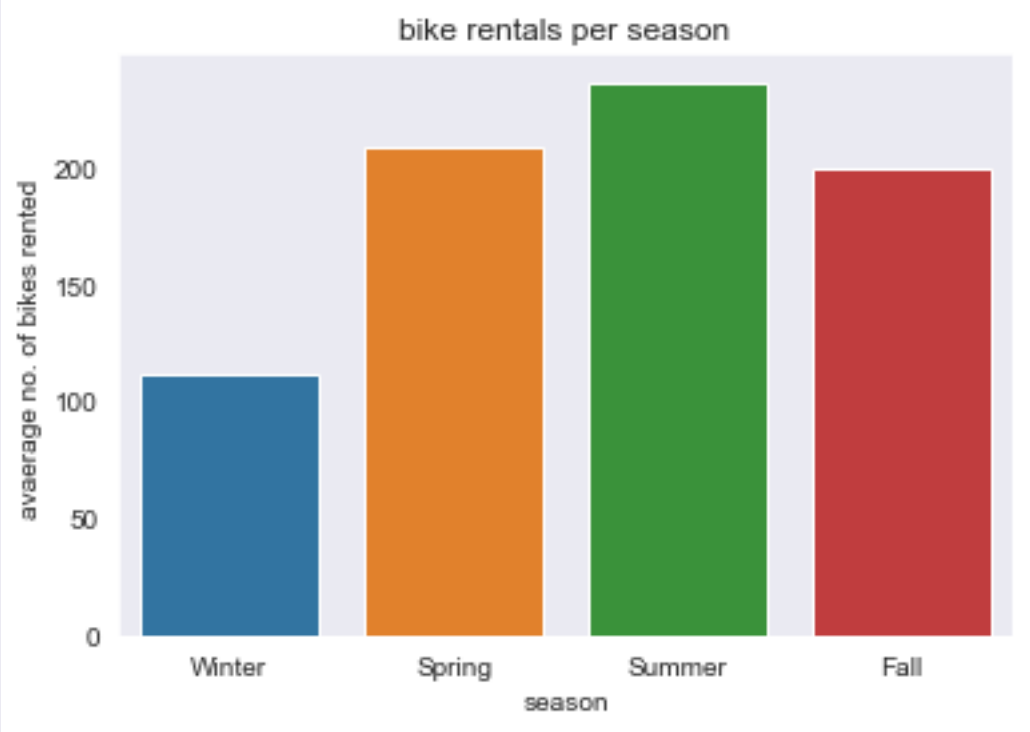




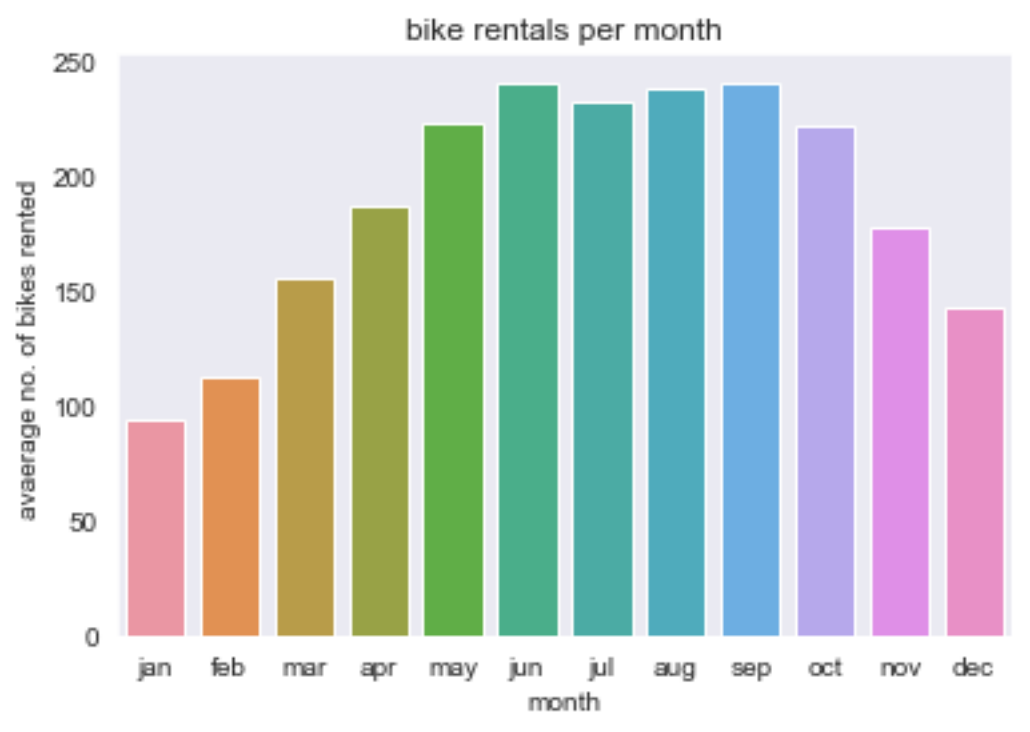
Casual distribution for season yearly



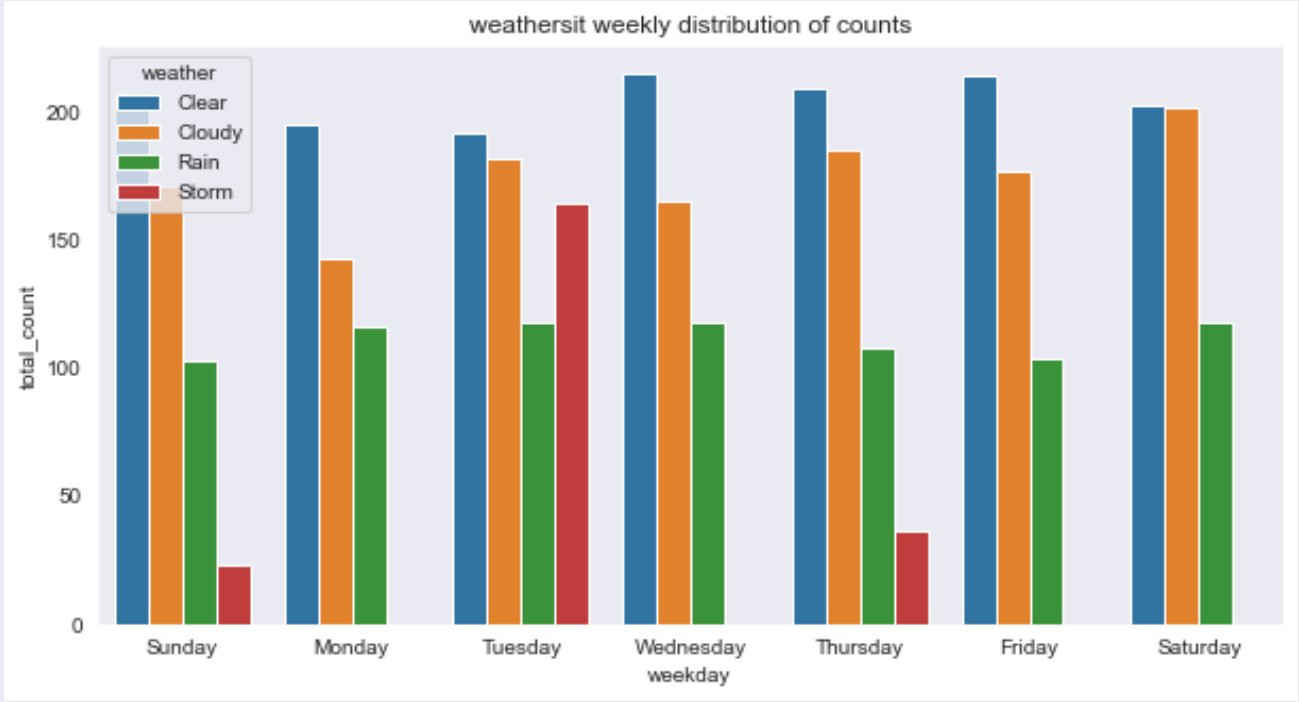
Bike rental per season



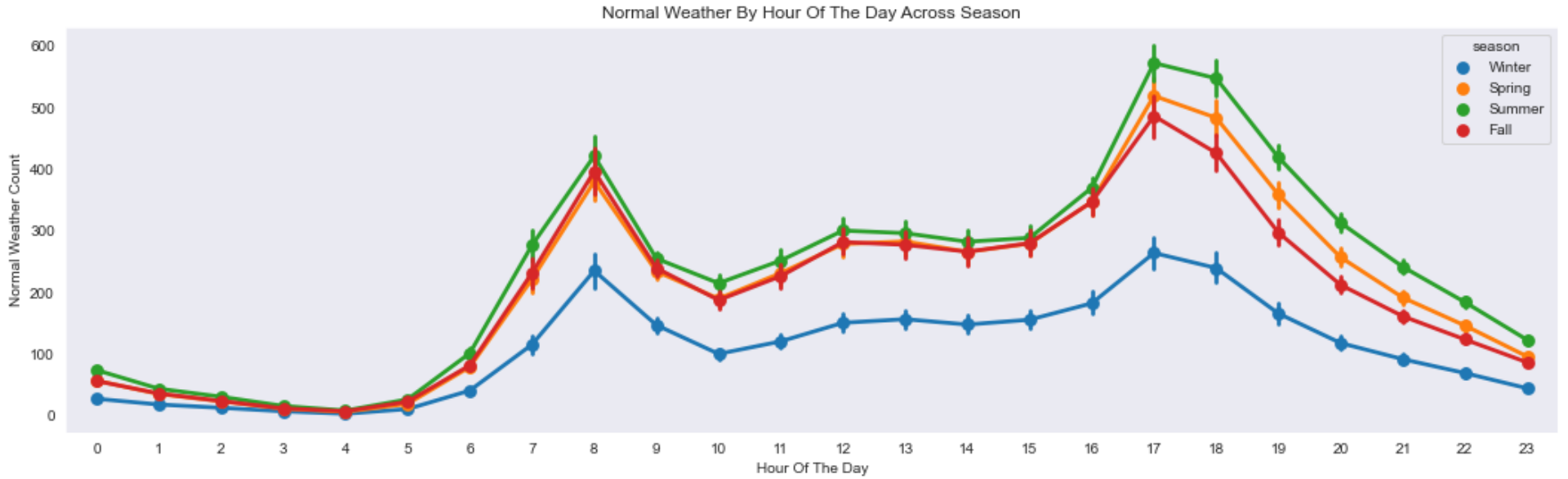
Bike rental per month



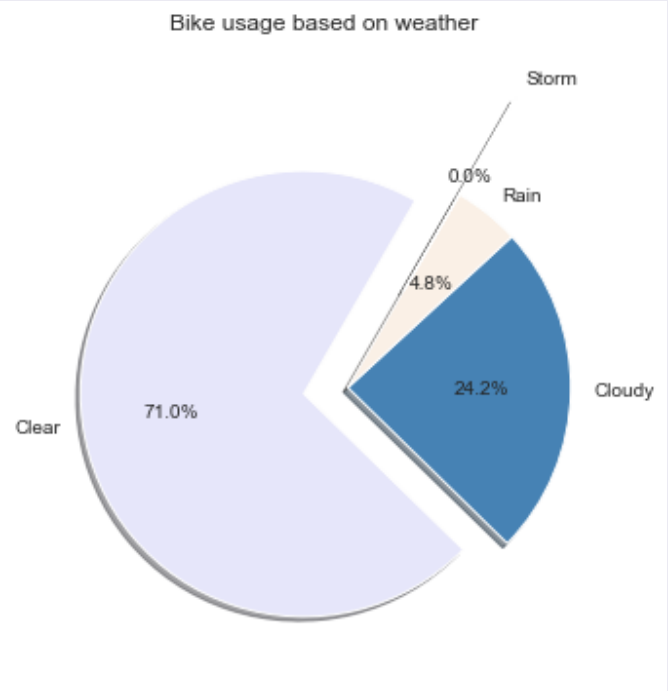
weather weekly distribution of counts



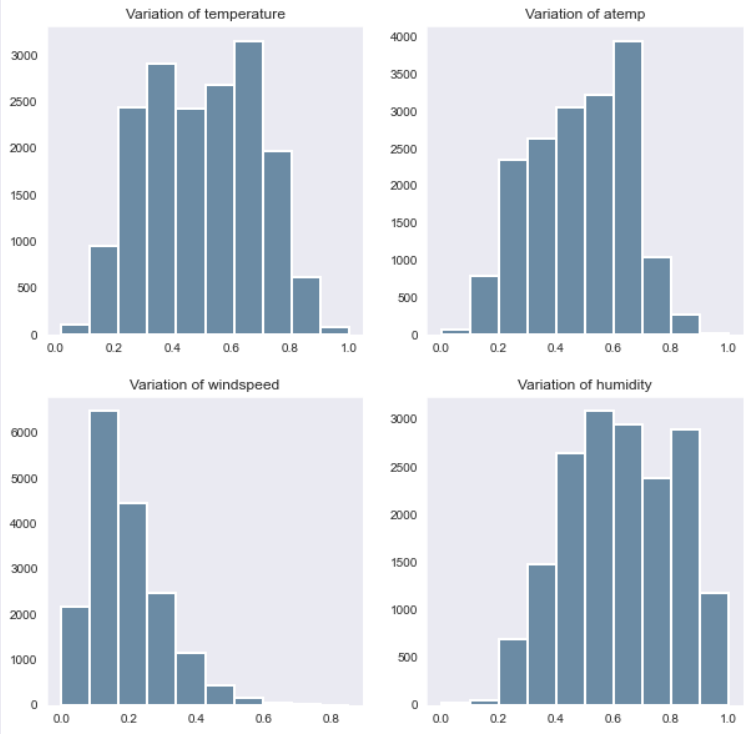
Normal weather By hour of the day across season



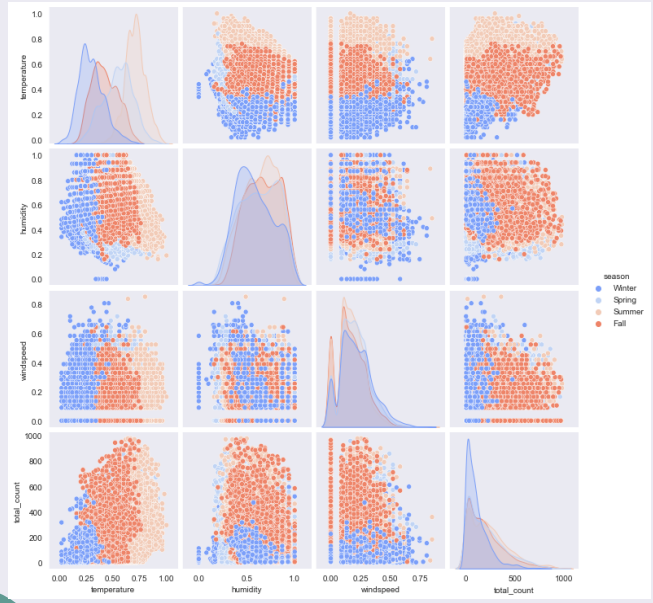
Bike usage on weather



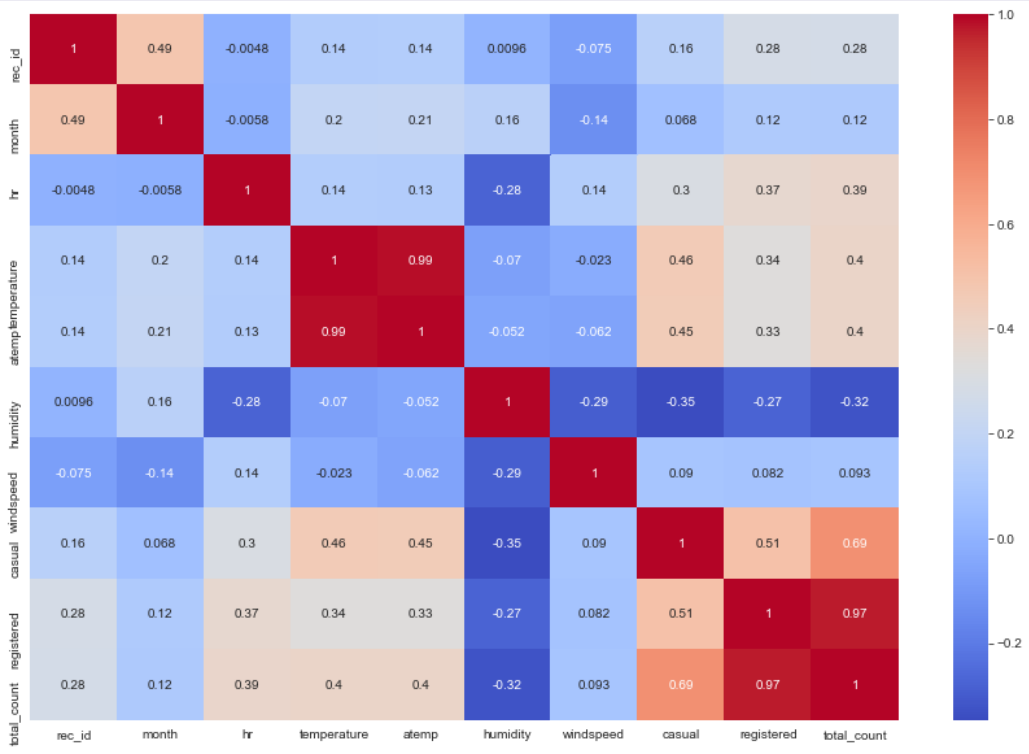
Humidity and temperature effect



Winds speed after fill by 0



Visualize correlation



Drop unnecessary column

Record Id

Date day

Holiday & weekday

Rigistered& casual

Holiday & weekday

atemp

Feature engineering

- Encode categorical column

Hour & season
Drop first column

-Fill zoro value in windspeed

by KNN neighbors value

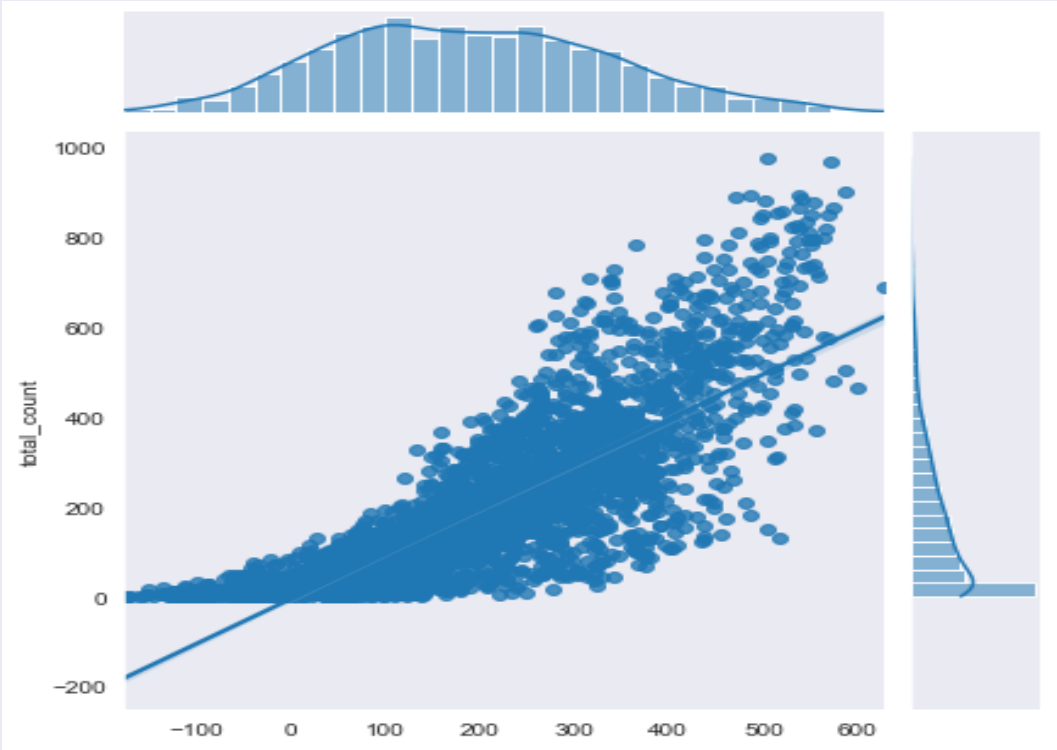
-Scaler numerical column

By standard scaler

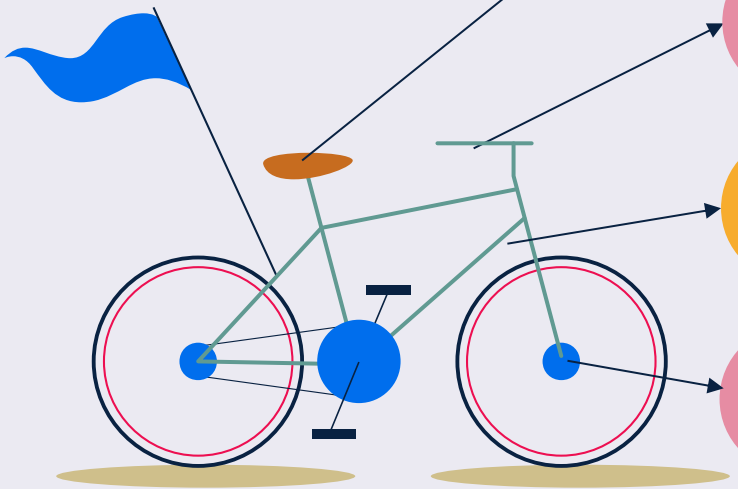
Models

	R square
Linear Regression	0.69
Ridge Regression	0.69
Lasso Regression	0.69
Polynomial degree (2)	0.90
Predict score	0.674

Result


1000
800
600
400
200
0
−200
total_count
−100
0
100
200
300
400
500
600

Tools



1. Pandas & numpy
2. matplotlib
3. seaborn
4. Skikit-learn

“The best way to predict your future is to create it.”

Thanks

Do you have any questions?