```
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#Reg No:-21BCE9496
#Branch:-C.S.E(A.I&M.L)
```

```
import seaborn as sns
import numpy as np
import pandas as pd
```

```
print(sns.get_dataset_names())
```

```
['anagrams', 'anscombe', 'attention', 'brain_networks', 'car_crashes', 'diamonds', 'dots', 'dowjones', 'exercise', 'flights', 'fmri
```

```
df=sns.load_dataset('car_crashes')
```

+ Code + Text

```
df
```

	total	speeding	alcohol	not_distracted	no_previous	ins_premium	ins_losses	a
0	18.8	7.332	5.640	18.048	15.040	784.55	145.08	
1	18.1	7.421	4.525	16.290	17.014	1053.48	133.93	
2	18.6	6.510	5.208	15.624	17.856	899.47	110.35	
3	22.4	4.032	5.824	21.056	21.280	827.34	142.39	
4	12.0	4.200	3.360	10.920	10.680	878.41	165.63	
5	13.6	5.032	3.808	10.744	12.920	835.50	139.91	
6	10.8	4.968	3.888	9.396	8.856	1068.73	167.02	
7	16.2	6.156	4.860	14.094	16.038	1137.87	151.48	
8	5.9	2.006	1.593	5.900	5.900	1273.89	136.05	
9	17.9	3.759	5.191	16.468	16.826	1160.13	144.18	
10	15.6	2.964	3.900	14.820	14.508	913.15	142.80	
11	17.5	9.450	7.175	14.350	15.225	861.18	120.92	
12	15.3	5.508	4.437	13.005	14.994	641.96	82.75	
13	12.8	4.608	4.352	12.032	12.288	803.11	139.15	

```
df.info
```

```
<bound method DataFrame.info of     total  speeding  alcohol  not_distracted  no_previous  ins_premium  \
0    18.8     7.332    5.640          18.048       15.040       784.55
1    18.1     7.421    4.525          16.290       17.014      1053.48
2    18.6     6.510    5.208          15.624       17.856       899.47
3    22.4     4.032    5.824          21.056       21.280       827.34
4    12.0     4.200    3.360          10.920       10.680       878.41
5    13.6     5.032    3.808          10.744       12.920       835.50
6    10.8     4.968    3.888           9.396        8.856      1068.73
7    16.2     6.156    4.860          14.094       16.038      1137.87
8     5.9     2.006    1.593           5.900        5.900      1273.89
9    17.9     3.759    5.191          16.468       16.826      1160.13
10   15.6     2.964    3.900          14.820       14.508       913.15
11   17.5     9.450    7.175          14.350       15.225       861.18
12   15.3     5.508    4.437          13.005       14.994       641.96
13   12.8     4.608    4.352          12.032       12.288       803.11
14   14.5     3.625    4.205          13.775       13.775       710.46
15   15.7     2.669    3.925          15.229       13.659       649.06
16   17.8     4.806    4.272          13.706       15.130       780.45
17   21.4     4.066    4.922          16.692       16.264       872.51
18   20.5     7.175    6.765          14.965       20.090      1281.55
19   15.1     5.738    4.530          13.137       12.684       661.88
20   12.5     4.250    4.000           8.875       12.375      1048.78
21    8.2     1.886    2.870           7.134        6.560      1011.14
22   14.1     3.384    3.948          13.395       10.857      1110.61
23    9.6     2.208    2.784           8.448        8.448       777.18
24   17.6     2.640    5.456           1.760       17.600       896.07
25   16.1     6.923    5.474          14.812       13.524       790.32
26   21.4     8.346    9.416          17.976       18.190       816.21
27   14.9     1.937    5.215          13.857       13.410       732.28
28   14.7     5.439    4.704          13.965       14.553      1029.87
29   11.6     4.060    3.480          10.092        9.628       746.54
30   11.2     1.792    3.136           9.632        8.736      1301.52
31   18.4     3.496    4.968          12.328       18.032       869.85
32   12.3     3.936    3.567          10.824        9.840      1234.31
33   16.8     6.552    5.208          15.792       13.608       708.24
34   23.9     5.497   10.038          23.661       20.554       688.75
35   14.1     3.948    4.794          13.959       11.562       697.73
36   19.9     6.368    5.771          18.308       18.706       881.51
37   12.8     4.224    3.328           8.576       11.520       804.71
38   18.2     9.100    5.642          17.472       16.016       905.99
39   11.1     3.774    4.218          10.212        8.769      1148.99
40   23.9     9.082    9.799          22.944       19.359       858.97
41   19.4     6.014    6.402          19.012       16.684       669.31
42   19.5     4.095    5.655          15.990       15.795       767.91
43   19.4     7.760    7.372          17.654       16.878      1004.75
44   11.3     4.859    1.808           9.944       10.848       809.38
45   13.6     4.080    4.080          13.056       12.920       716.20
46   12.7     2.413    3.429          11.049       11.176       768.95
47   10.6     4.452    3.498           8.692        9.116       890.03
48   23.8     8.092    6.664          23.086       20.706       992.61
49   13.8     4.968    4.554           5.382       11.592       670.31
50   17.4     7.308    5.568          14.094       15.660       791.14

    ins_losses abbrev
0       145.08     AL
1       133.93     AK
2       110.35     AZ
3       142.39     AR
```

```
df.info()  #By grouping dataset
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 51 entries, 0 to 50
Data columns (total 8 columns):
 #   Column          Non-Null Count  Dtype  
---  ------          --------------  -----  
 0   total           51 non-null     float64
 1   speeding        51 non-null     float64
 2   alcohol         51 non-null     float64
 3   not_distracted  51 non-null     float64
 4   no_previous     51 non-null     float64
 5   ins_premium     51 non-null     float64
 6   ins_losses      51 non-null     float64
 7   abbrev          51 non-null     object 
dtypes: float64(7), object(1)
memory usage: 3.3+ KB
```

```
df.head(10)
```

	total	speeding	alcohol	not_distracted	no_previous	ins_premium	ins_losses
0	18.8	7.332	5.640	18.048	15.040	784.55	145.08
1	18.1	7.421	4.525	16.290	17.014	1053.48	133.93
2	18.6	6.510	5.208	15.624	17.856	899.47	110.35
3	22.4	4.032	5.824	21.056	21.280	827.34	142.39
4	12.0	4.200	3.360	10.920	10.680	878.41	165.63
5	13.6	5.032	3.808	10.744	12.920	835.50	139.91
6	10.8	4.968	3.888	9.396	8.856	1068.73	167.02
7	16.2	6.156	4.860	14.094	16.038	1137.87	151.48
8	5.9	2.006	1.593	5.900	5.900	1273.89	136.05
9	17.9	3.759	5.191	16.468	16.826	1160.13	144.18

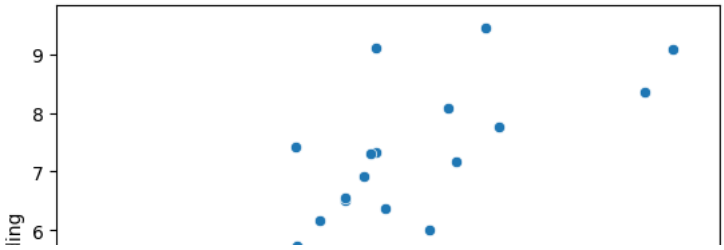
```
df.tail(10)
```

	total	speeding	alcohol	not_distracted	no_previous	ins_premium	ins_losses
41	19.4	6.014	6.402	19.012	16.684	669.31	96.87
42	19.5	4.095	5.655	15.990	15.795	767.91	155.57
43	19.4	7.760	7.372	17.654	16.878	1004.75	156.83
44	11.3	4.859	1.808	9.944	10.848	809.38	109.48
45	13.6	4.080	4.080	13.056	12.920	716.20	109.61
46	12.7	2.413	3.429	11.049	11.176	768.95	153.72
47	10.6	4.452	3.498	8.692	9.116	890.03	111.62
48	23.8	8.092	6.664	23.086	20.706	992.61	152.56
49	13.8	4.968	4.554	5.382	11.592	670.31	106.62
50	17.4	7.308	5.568	14.094	15.660	791.14	122.04

Graphs between alcochol and speeding

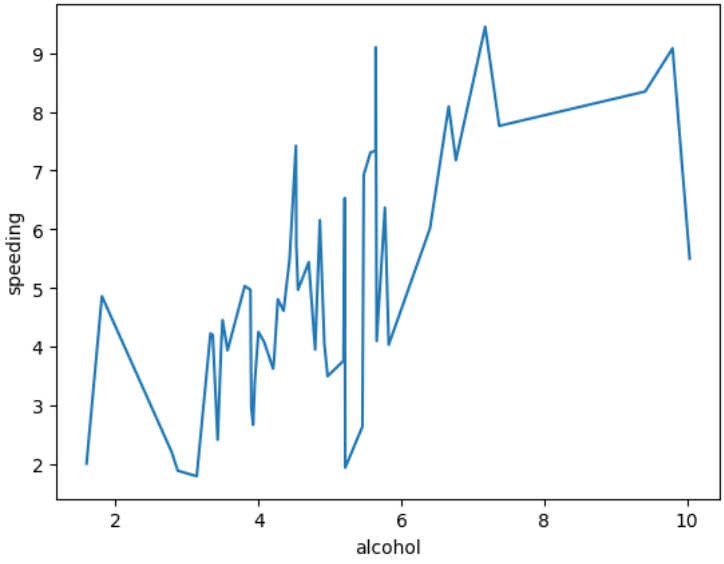
```
#scatterplot
sns.scatterplot(x="alcohol",y="speeding",data=df)

#Inference:From the plot we can say that speeding is increasing when alcohol level is increased
```

```
<Axes: xlabel='alcohol', ylabel='speeding'>
```



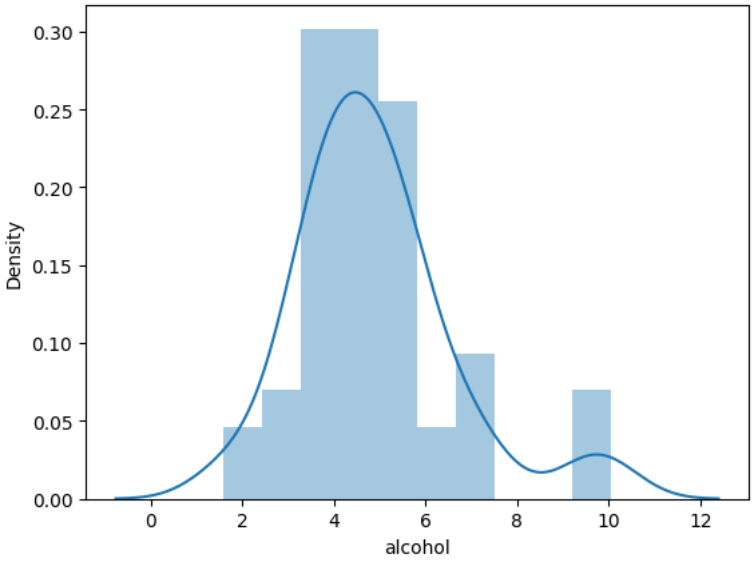

```
#Lineplot
sns.lineplot(x="alcohol",y="speeding",data=df)
#Inference:From the plot we can say that speed is increasing and decreasing,after a point bin alcohol level speeding is gradually increas
```

```
<Axes: xlabel='alcohol', ylabel='speeding'>
```




```
#Distribution plot
sns.distplot(df["alcohol"])
#Inference:From the given plot we can say that alcohol density is increasing upto 4 and high at points between 4 & 6,then cecreasing from
```

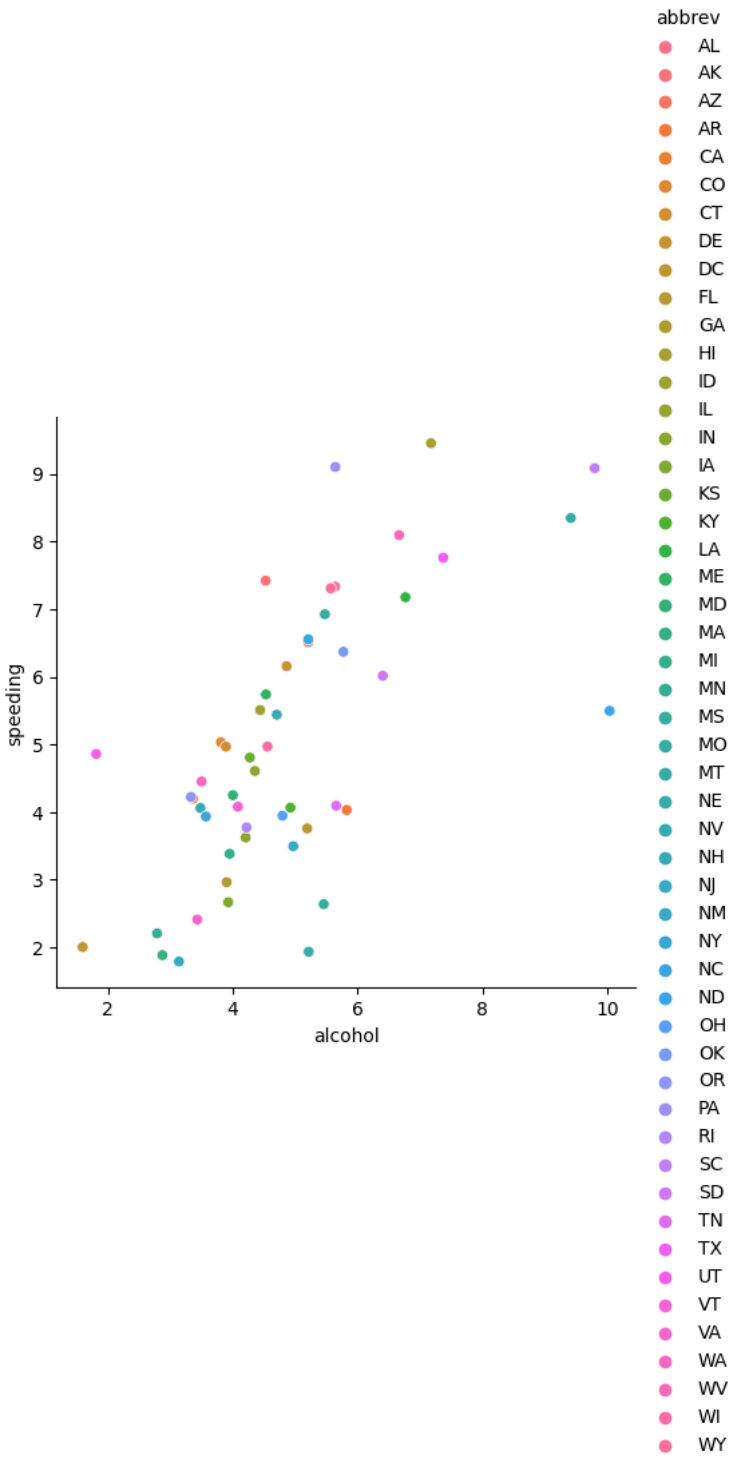
```
<ipython-input-19-281d56044cde>:1: UserWarning:

`distplot` is a deprecated function and will be removed in seaborn v0.14.0.

Please adapt your code to use either `displot` (a figure-level function with
similar flexibility) or `histplot` (an axes-level function for histograms).

For a guide to updating your code to use the new functions, please see
https://gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751

  sns.distplot(df["alcohol"])
<Axes: xlabel='alcohol', ylabel='Density'>
```




```
#Relational plot
sns.relplot(x="alcohol",y="speeding",data=df,hue="abbrev")
```

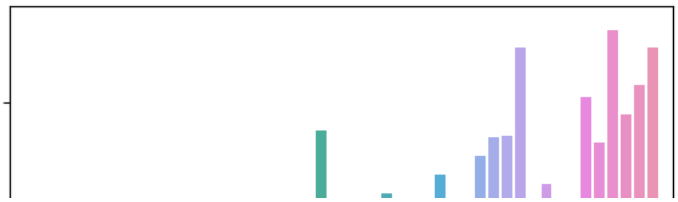
```
#Inference:From the plot we can say that speeding is increasing when alcohol level is increasing for specific abbrev's
```

```
<seaborn.axisgrid.FacetGrid at 0x799acb99f880>
```



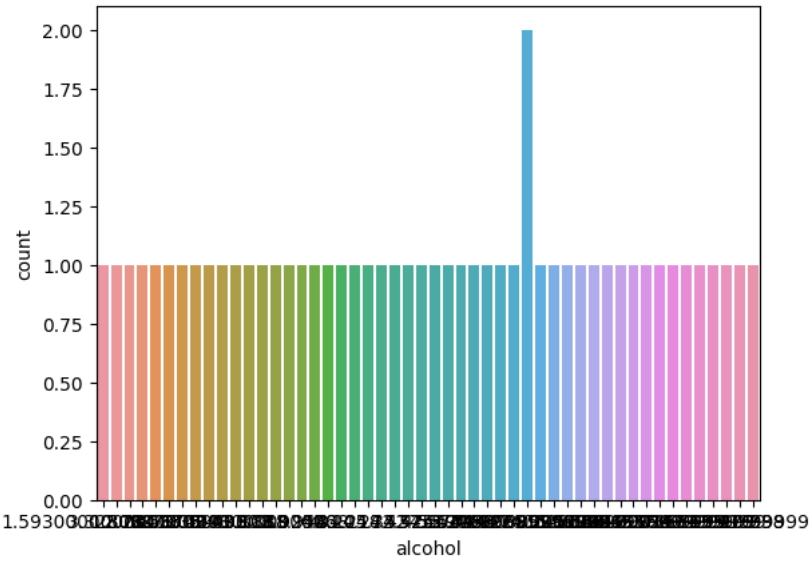

```
#Barplot
sns.barplot(x="alcohol",y="speeding",data=df,ci=None)
#Inference:From the plot we can say that Speeding is increasing when alcohol level is increasing
```

```
<ipython-input-29-ee8a2af1a27f>:1: FutureWarning:

The `ci` parameter is deprecated. Use `errorbar=None` for the same effect.

  sns.barplot(x="alcohol",y="speeding",data=df,ci=None)
<Axes: xlabel='alcohol', ylabel='speeding'>
```



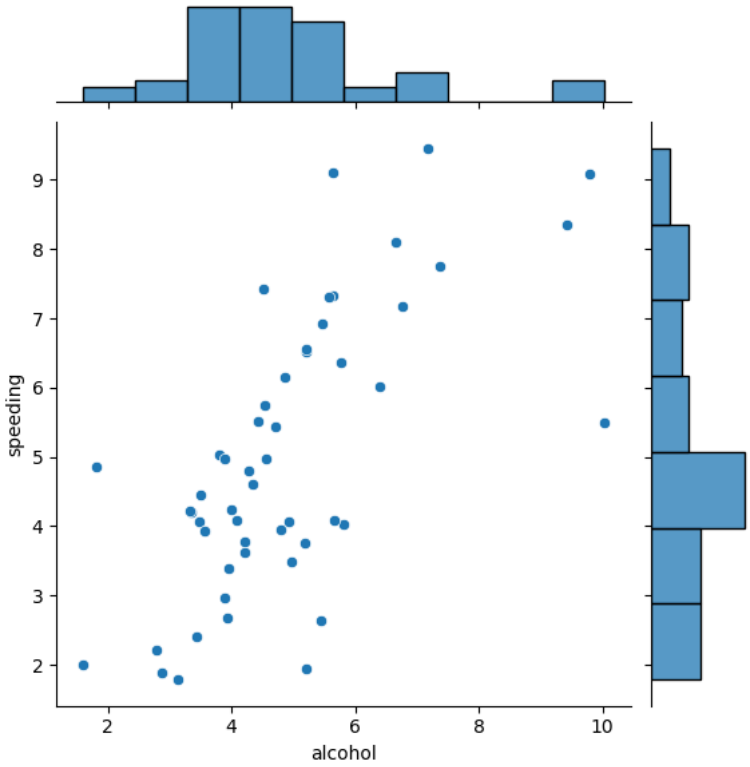

```
#Countplot
sns.countplot(x="alcohol",data=df)
#Inference:From the plot we can say that alcohol level is constant upto a level after that there is a sudden decrease in the count level
```

```
<Axes: xlabel='alcohol', ylabel='count'>
```



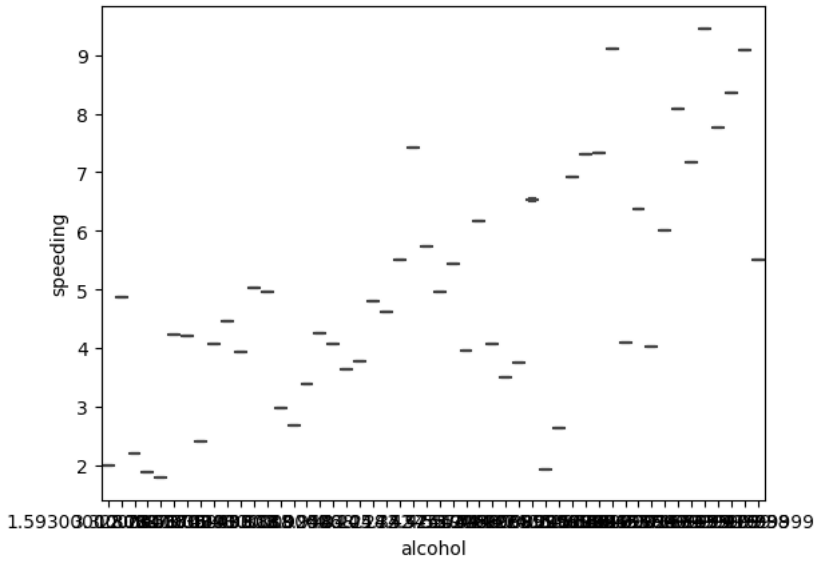

```
#Jointplot
sns.jointplot(x="alcohol",y="speeding",data=df)
#Inference:In the plot the graphs above is alcohol &speeding graphs and the dots are bivariate graphs,from the plot we can say that speed
```

```
<seaborn.axisgrid.JointGrid at 0x799ac9751780>
```



```
#Boxplot
sns.boxplot(x="alcohol",y="speeding",data=df)
#Inference:From the plot we can say that both speeding and alcohol are varying and changing each other
```

```
<Axes: xlabel='alcohol', ylabel='speeding'>
```



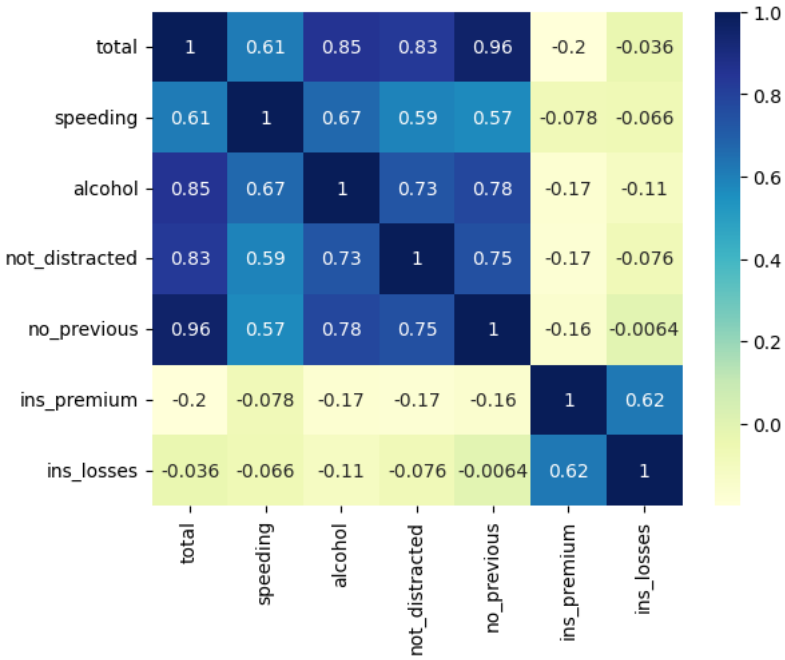

```
#Correlation
corr=df.corr()
corr
```

```
<ipython-input-26-baa39c59f9c7>:2: FutureWarning: The default value of numeric_onl
  corr=df.corr()
```

	total	speeding	alcohol	not_distracted	no_previous	ins_prem
total	1.000000	0.611548	0.852613	0.827560	0.956179	-0.199
speeding	0.611548	1.000000	0.669719	0.588010	0.571976	-0.077
alcohol	0.852613	0.669719	1.000000	0.732816	0.783520	-0.170
not_distracted	0.827560	0.588010	0.732816	1.000000	0.747307	-0.174
no_previous	0.956179	0.571976	0.783520	0.747307	1.000000	-0.156
ins_premium	-0.199702	-0.077675	-0.170612	-0.174856	-0.156895	1.000
ins_losses	-0.036011	-0.065928	-0.112547	-0.075970	-0.006359	0.623

```
#Heatmap
sns.heatmap(corr,annot=True,cmap="YlGnBu")
```

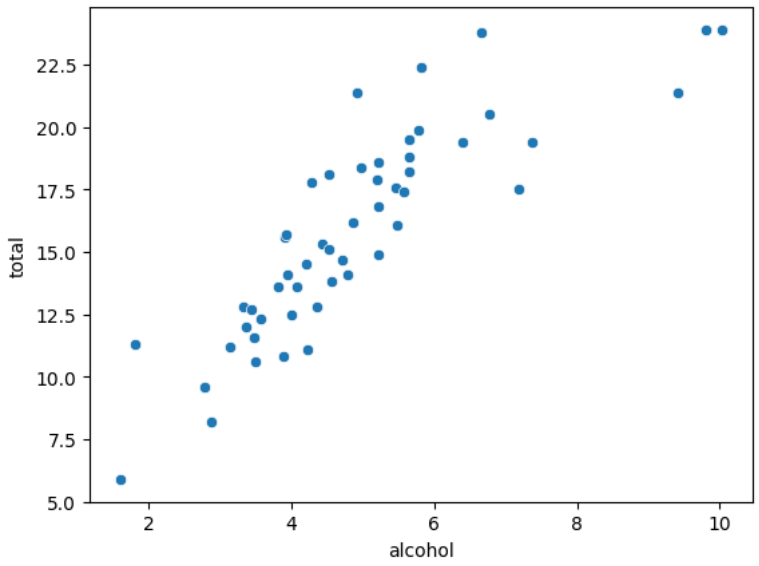
```
<Axes: >
```



Graphs between alcohol and total

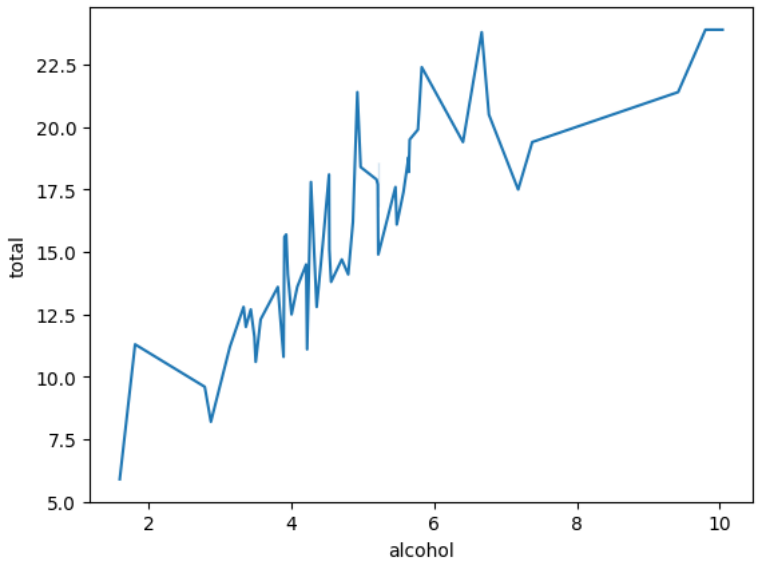
```
#scatterplot
sns.scatterplot(x="alcohol",y="total",data=df)
#Inference:From the plot we can say that Total is increasing when alcochol is increasing
```

```
<Axes: xlabel='alcohol', ylabel='total'>
```



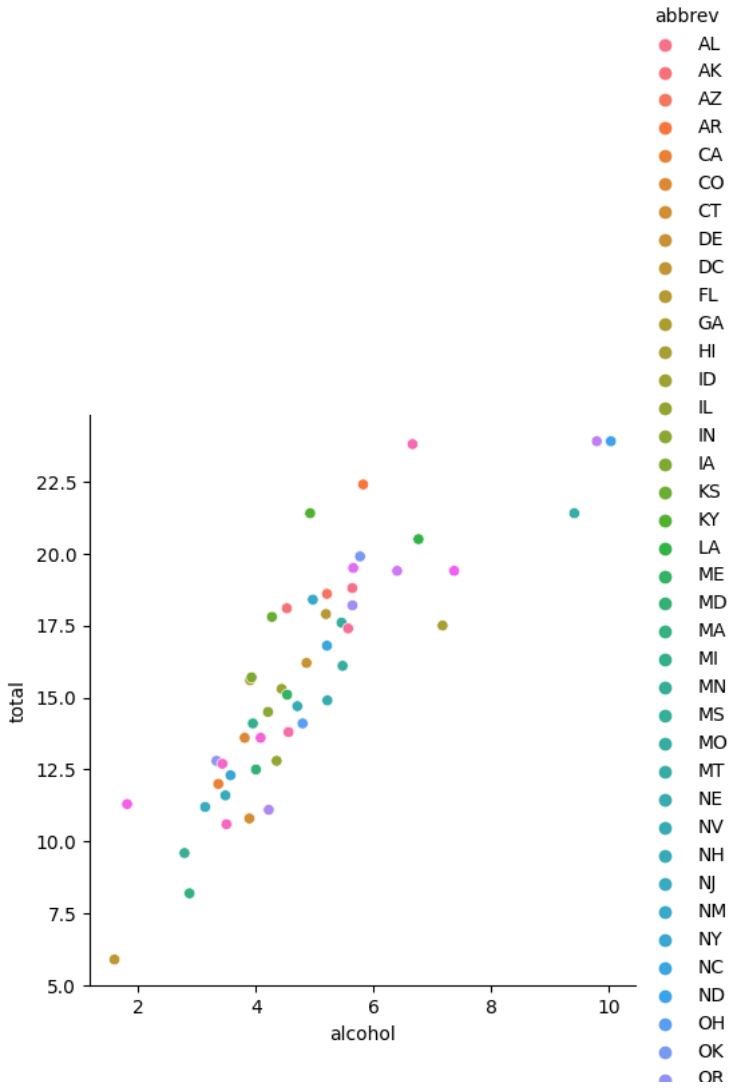

```
#lineplot
sns.lineplot(x="alcohol",y="total",data=df)
#Inference:From the plot we can say that Total is increasing when alcochol is increasing
```

```
<Axes: xlabel='alcohol', ylabel='total'>
```



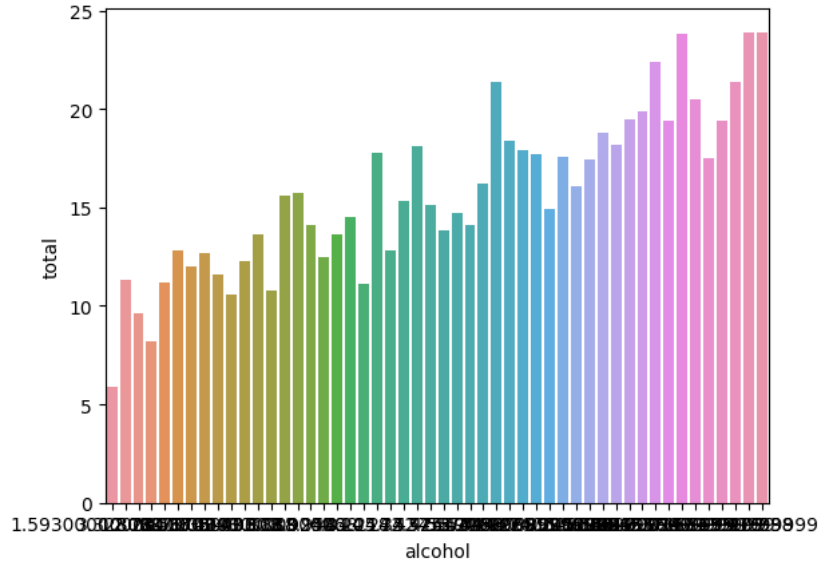

```
#Relational plot
sns.relplot(x="alcohol",y="total",data=df,hue="abbrev")
#Inference:From the plot we can say that total is increasing when alcohol level is increasing for specific abbrev's
```

```
<seaborn.axisgrid.FacetGrid at 0x799ac6aa65c0>
```



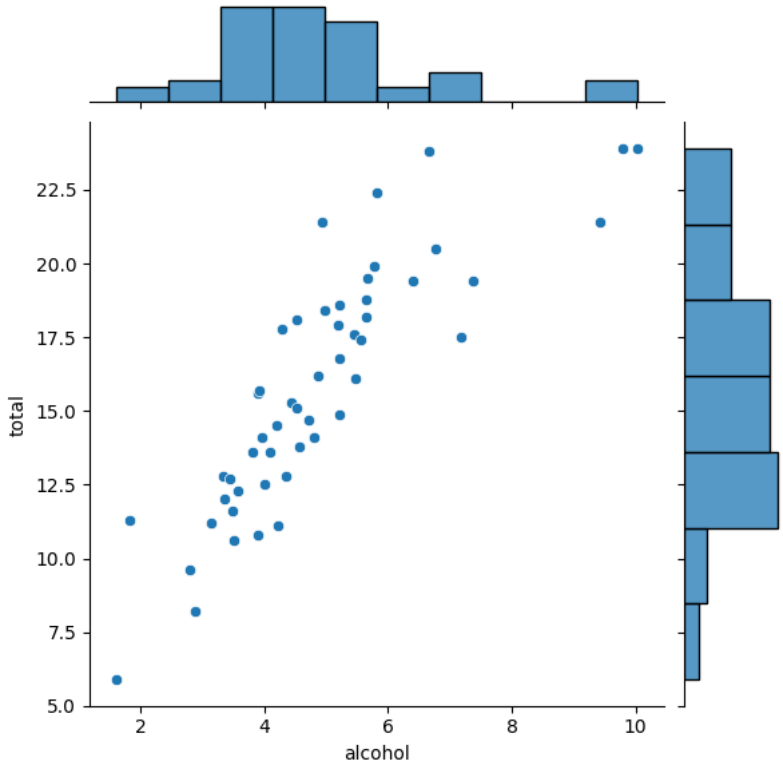

```
#Barplot
sns.barplot(x="alcohol",y="total",data=df,ci=None)
#Inference:From the plot we can say that Total is increasing when alcochol is increasing
```

```
<ipython-input-36-872388e5a31b>:1: FutureWarning:

The `ci` parameter is deprecated. Use `errorbar=None` for the same effect.

  sns.barplot(x="alcohol",y="total",data=df,ci=None)
<Axes: xlabel='alcohol', ylabel='total'>
```



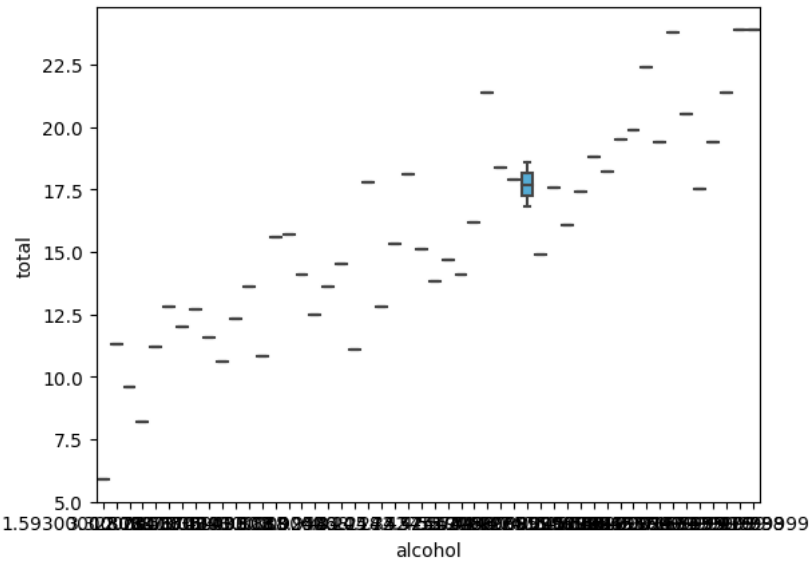

```
#Jointplot
sns.jointplot(x="alcohol",y="total",data=df)
```

```
<seaborn.axisgrid.JointGrid at 0x799ac622f730>
```




```
#Boxplot
sns.boxplot(x="alcohol",y="total",data=df)
#Inference:From the plot we can say that total is increasing when alcochol level is increasing  and quartiles are returned
```

```
<Axes: xlabel='alcohol', ylabel='total'>
```



Done by T.Sunith Kumar,21BCE9496

✓ 0s completed at 10:35 PM