```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

dff=sns.load_dataset('car_crashes')

dff.head(6)
```

```
   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


   ins_losses abbrev
0      145.08     AL
1      133.93     AK
2      110.35     AZ
3      142.39     AR
4      165.63     CA
5      139.91     CO
```

```
dff.tail(8)
```

```
    total  speeding  alcohol  not_distracted  no_previous  ins_premium
\
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
```

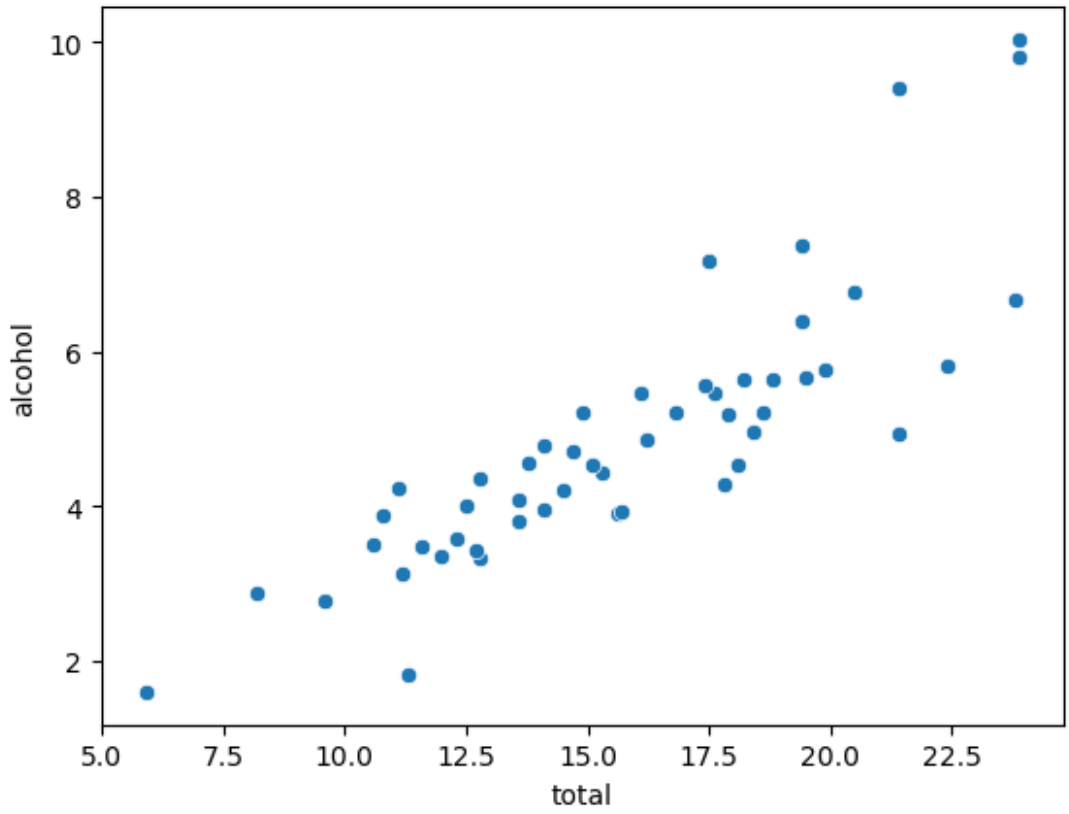
```
    ins_losses abbrev
43      156.83     TX
44      109.48     UT
45      109.61     VT
46      153.72     VA
47      111.62     WA
48      152.56     WV
49      106.62     WI
50      122.04     WY
```

```
dff.info()
```

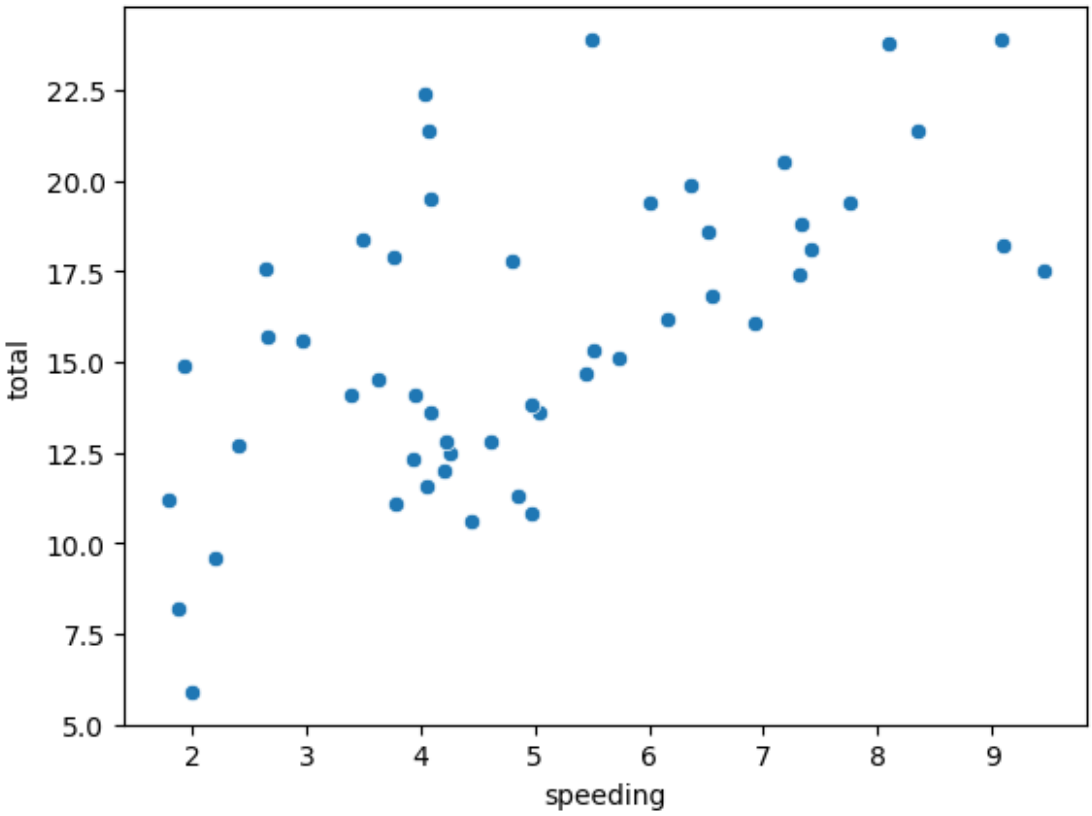
```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 51 entries, 0 to 50
Data columns (total 8 columns):
 #   Column          Non-Null Count  Dtype  
---  ------          --------------  -----  
 0   total           51 non-null     float64
 1   speeding        51 non-null     float64
 2   alcohol         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
```

```
sns.scatterplot(x="total",y="alcohol",data=dff)
```

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

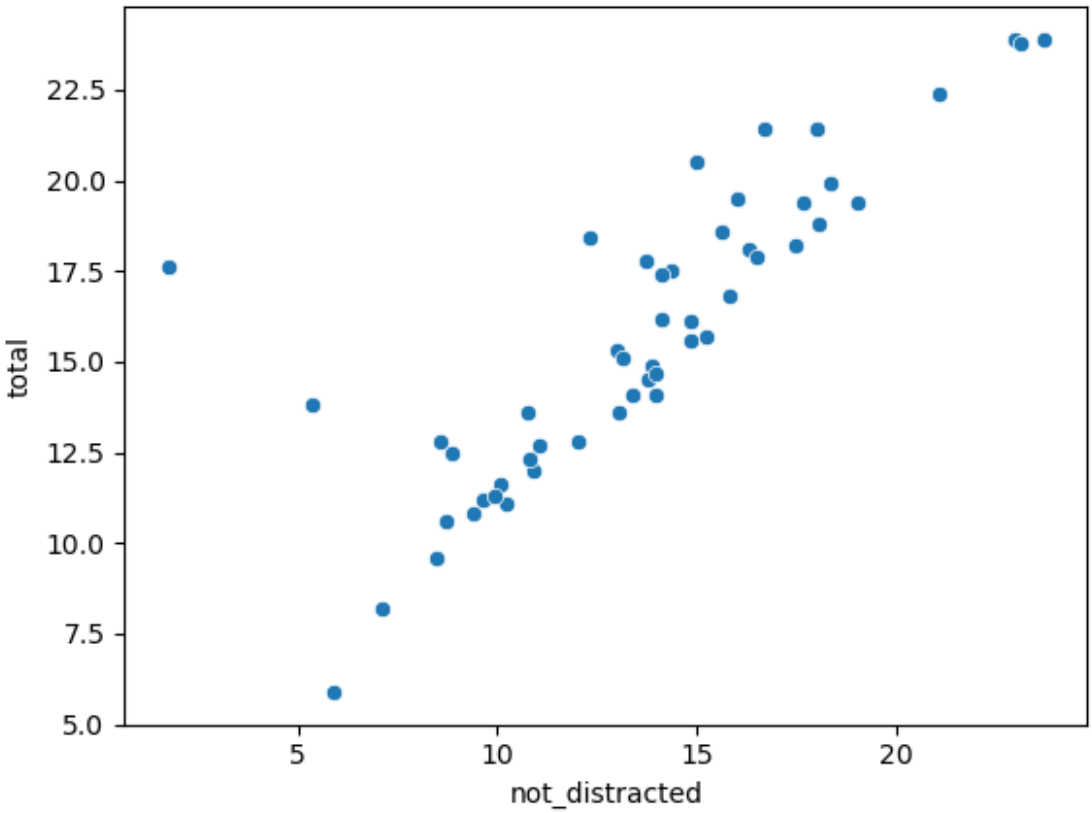



```
Inference from the plot is as car crashes increases as alcohol
consumption increases.
Directly proportional

sns.scatterplot(x="speeding",y="total",data=dff)

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

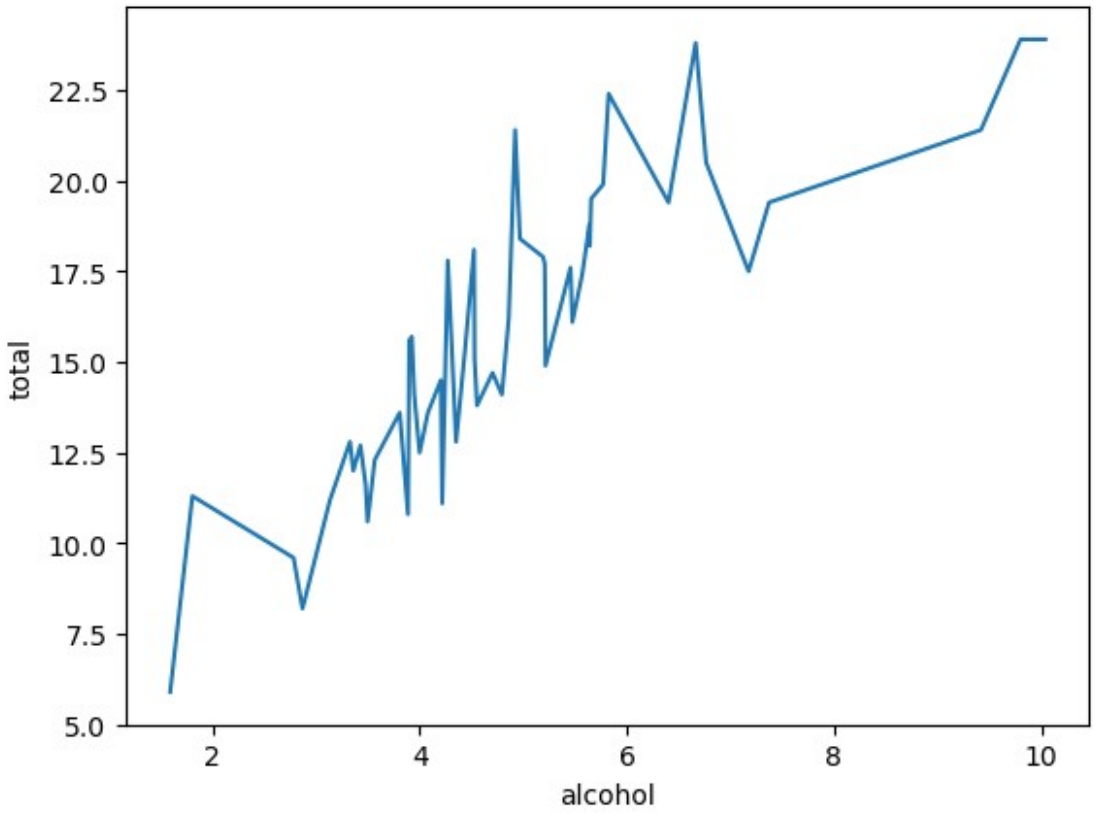



```
Inference:This means that as the speed increases,the total number of
car crashes also increases.
The trend line shows that the relationship is not linear, but rather
exponential.

sns.scatterplot(x="not_distracted",y="total",data=dff)
```

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



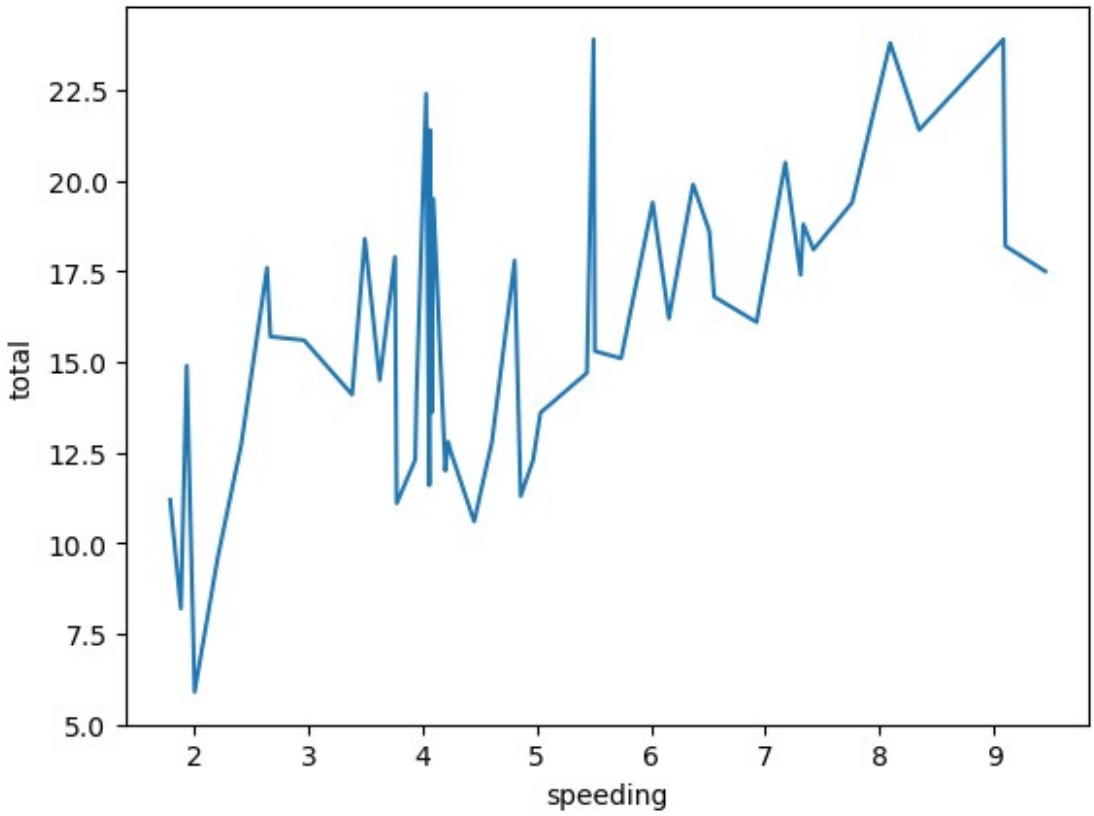

```
Inference:This means that as the level of distraction increases,the
number of car accidents also increases

sns.lineplot(x="alcohol",y="total",data=dff,errorbar=None)

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



Inference from the graph:-as car crashes increases as alcohol consumption increases.

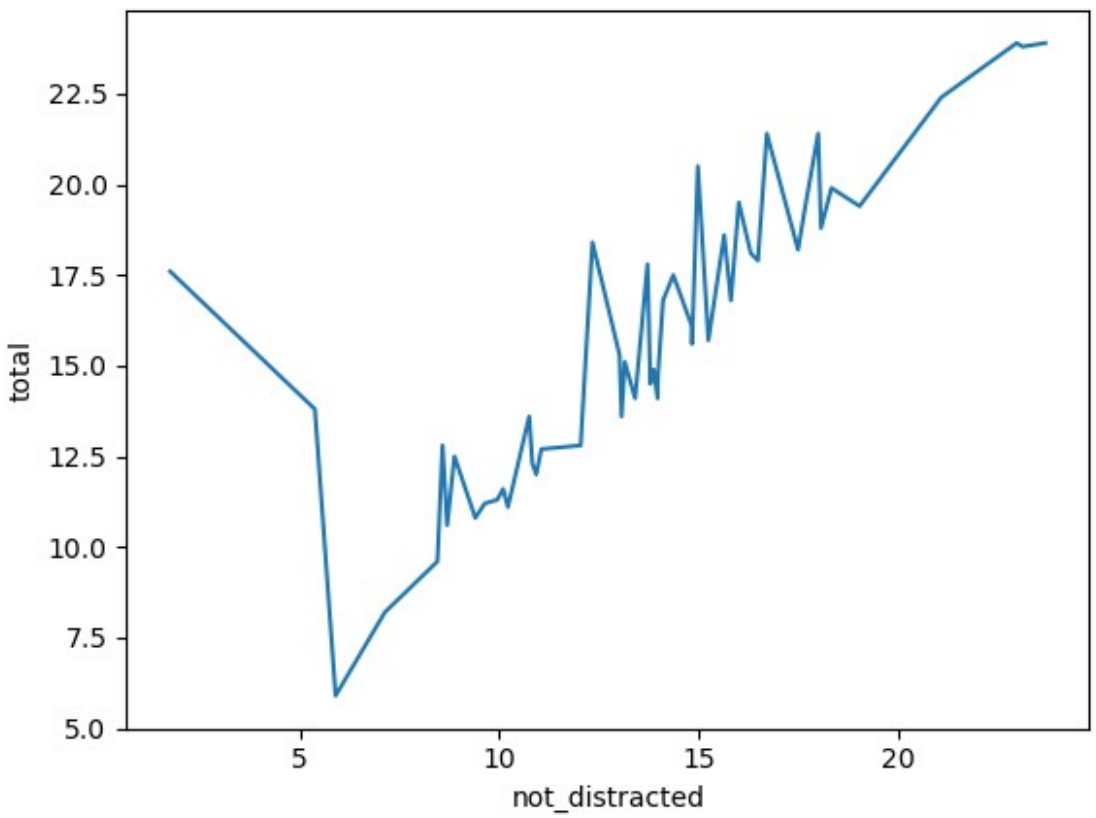
```
sns.lineplot(x="speeding",y="total",data=dff,errorbar=None)
```

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



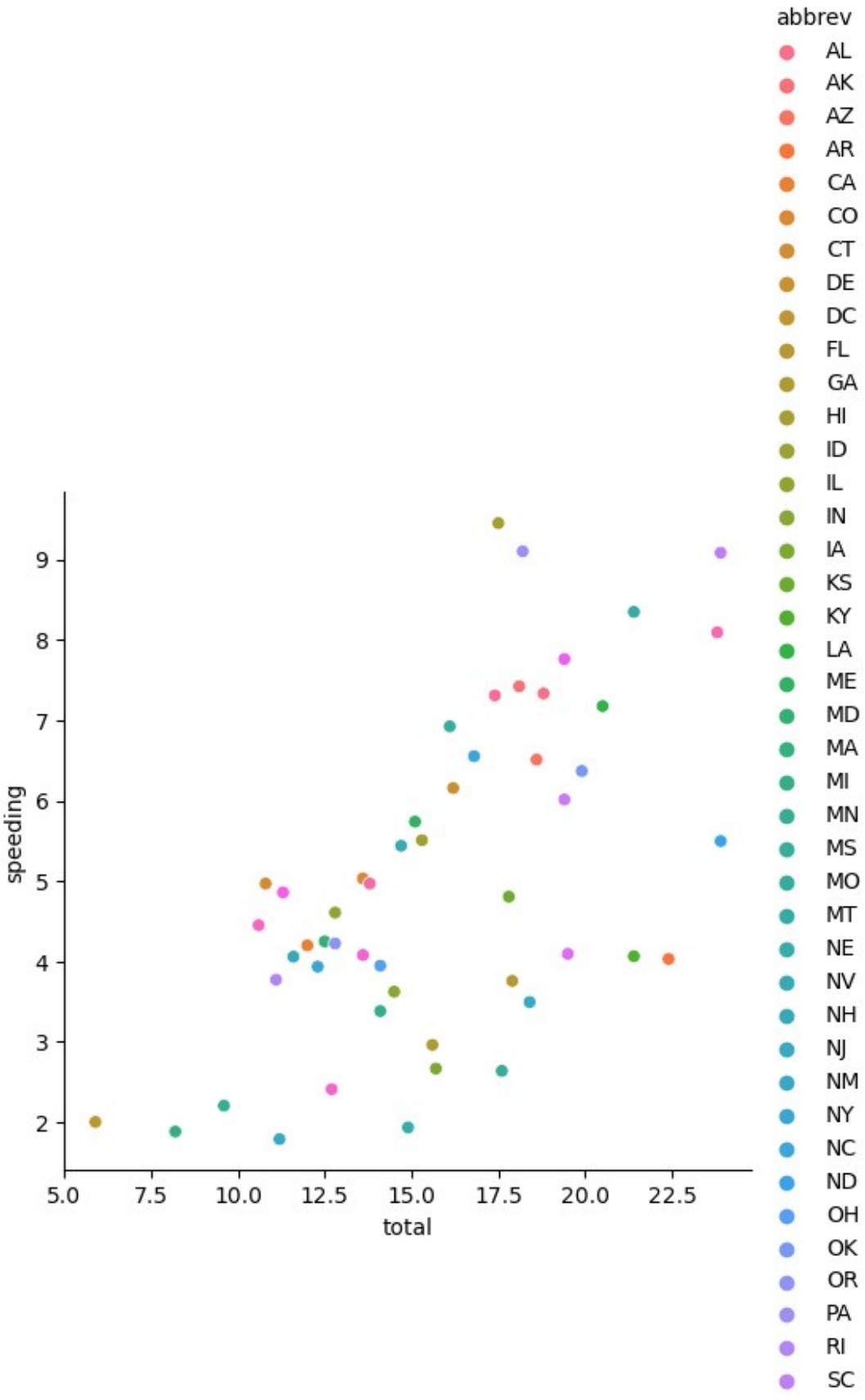

```
Inference:This means that as the speed increases,the total number of
car crashes also increases.

sns.lineplot(x="not_distracted",y="total",data=dff,errorbar=None)
```

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



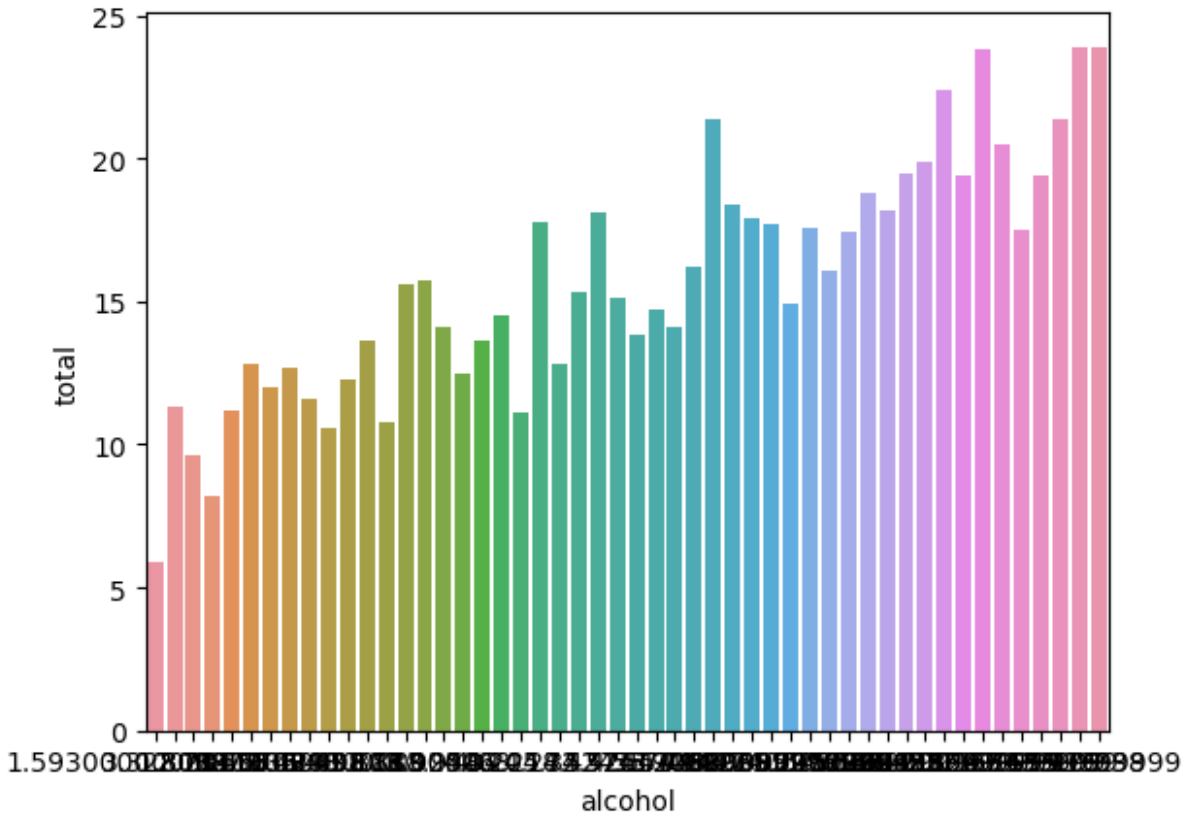

```
sns.relplot(x="total",y="speeding",data=dff,hue="abbrev")
```

```
<seaborn.axisgrid.FacetGrid at 0x272cca87340>
```


abbrev
AL
AK
AZ
AR
CA
CO
CT
DE
DC
FL
GA
HI
ID
IL
IN
IA
KS
KY
LA
ME
MD
MA
MI
MN
MS
MO
MT
NE
NV
NH
NJ
NM
NY
NC
ND
OH
OK
OR
PA
RI
SC
speeding
9
8
7
6
5
4
3
2
5.0
7.5
10.0
12.5
15.0
17.5
20.0
22.5
total

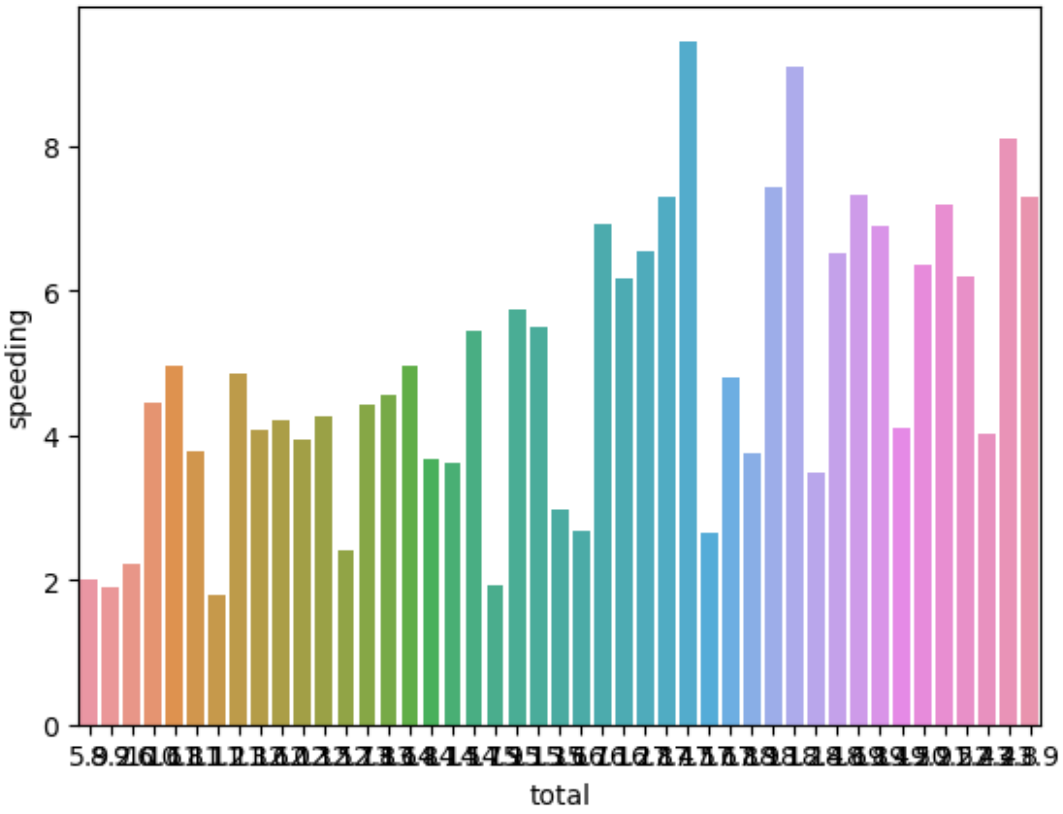
```
sns.barplot(data=dff,x="alcohol",y="total",errorbar=None)
```

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



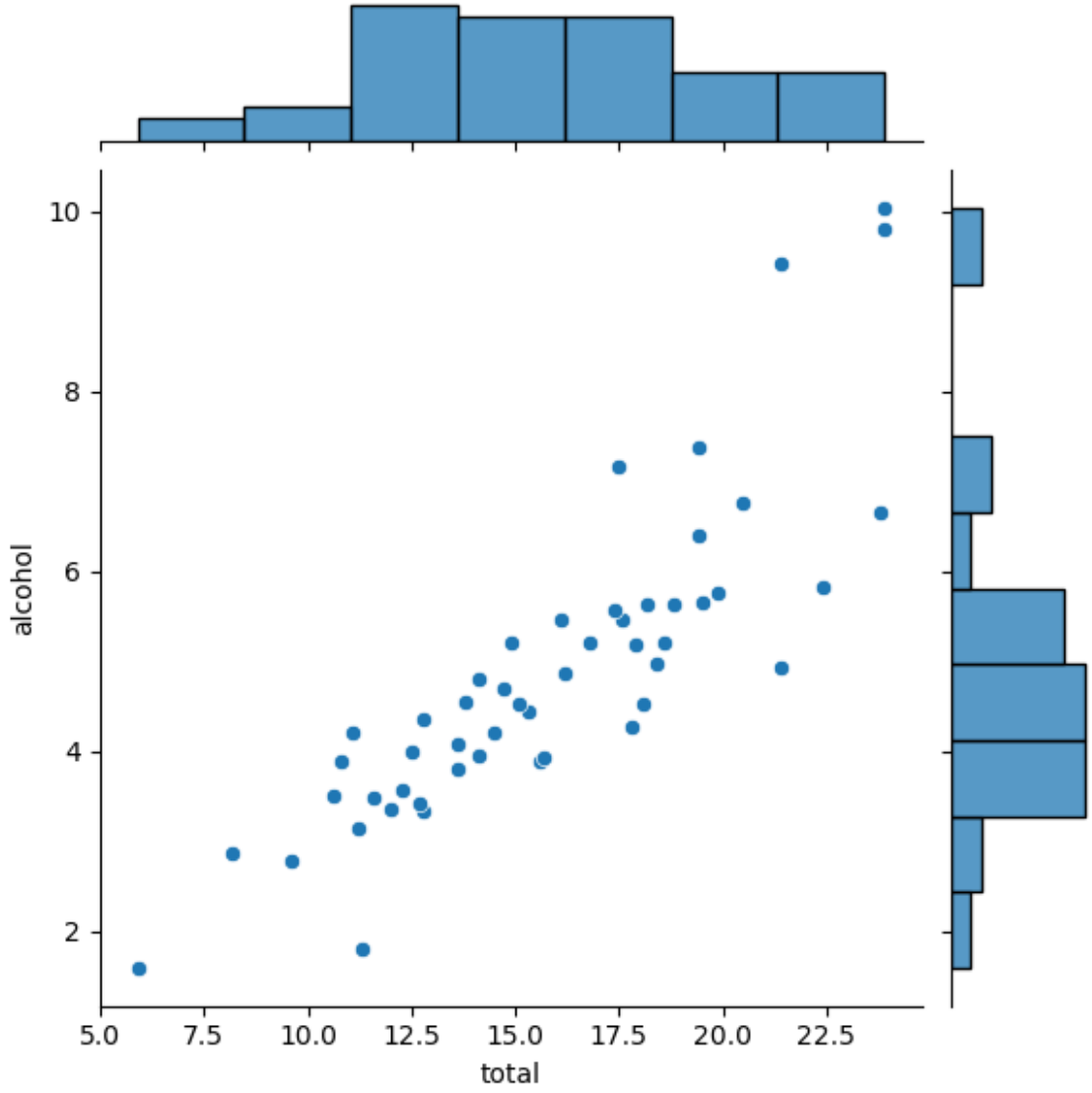

```
sns.barplot(data=dff,x="total",y="speeding",errorbar=None)
```

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



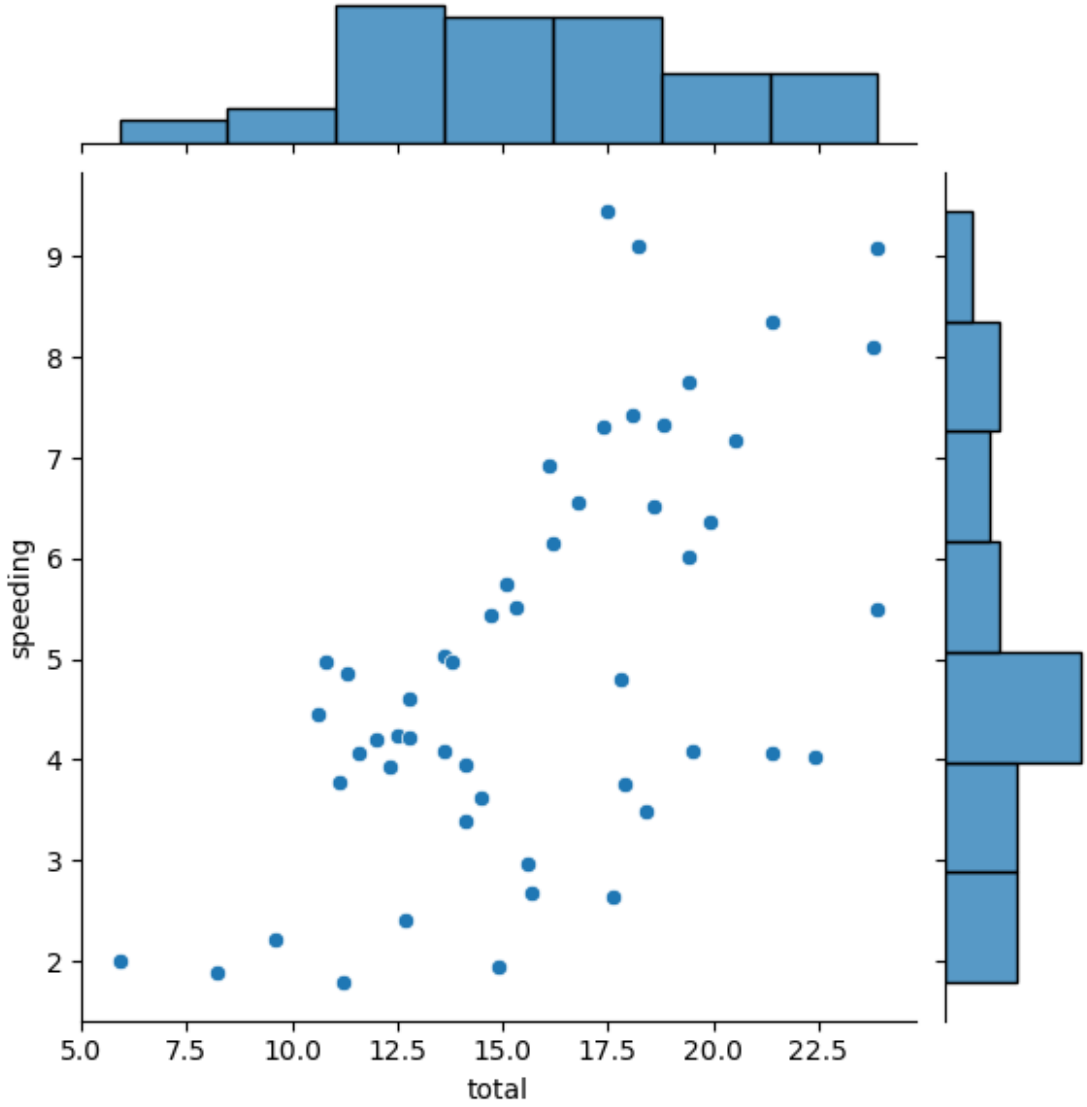

```
sns.jointplot(x="total",y="alcohol",data=dff)
```

```
<seaborn.axisgrid.JointGrid at 0x272cfbbe110>
```



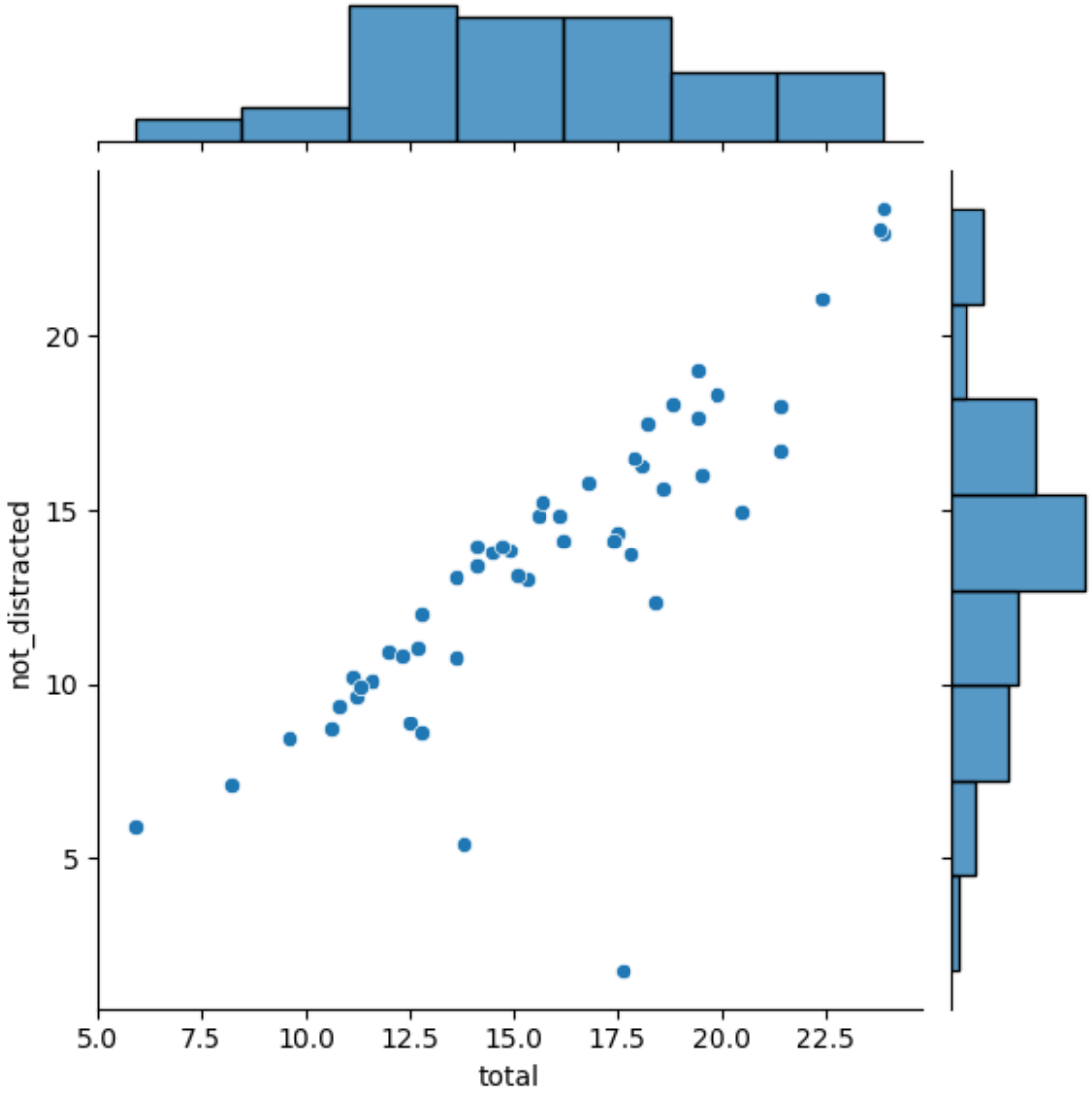

```
sns.jointplot(x="total",y="speeding",data=dff)
```

```
<seaborn.axisgrid.JointGrid at 0x272cfcc01f0>
```



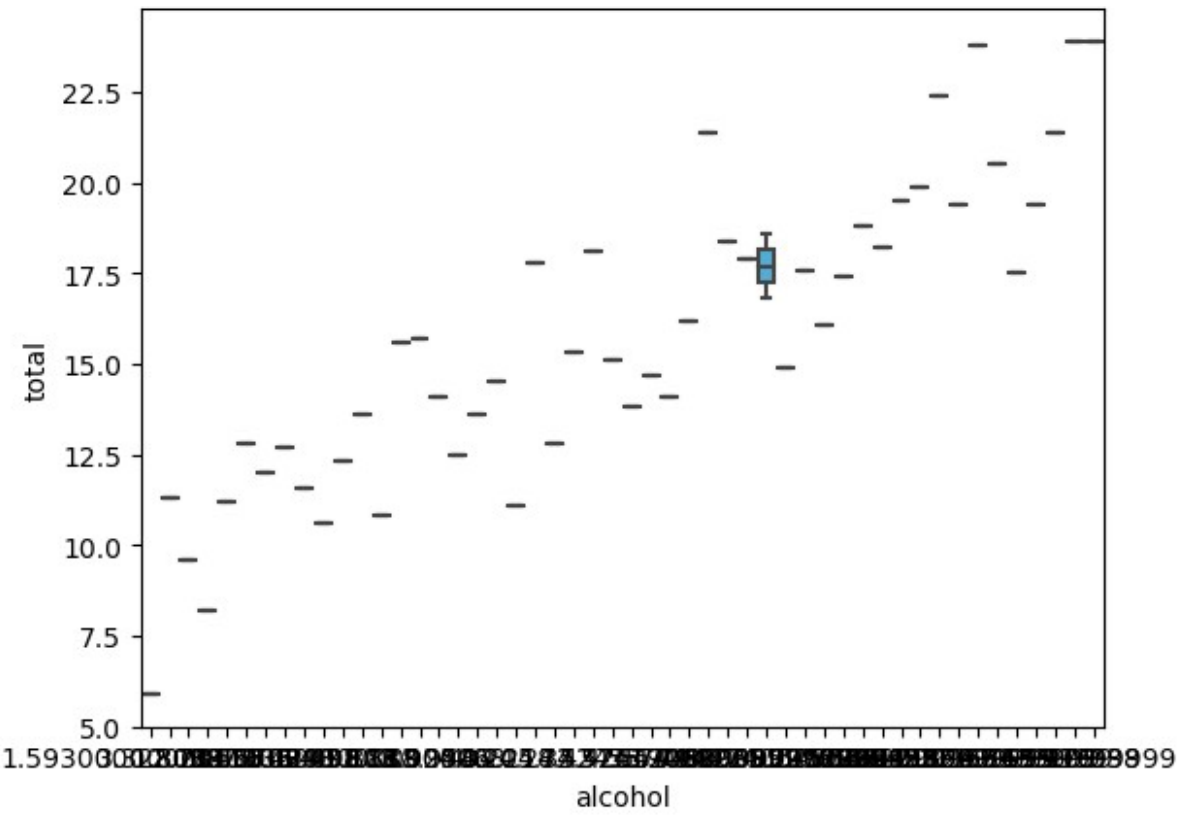

```
sns.jointplot(x="total",y="not_distracted",data=dff)
```

```
<seaborn.axisgrid.JointGrid at 0x272d03cb400>
```



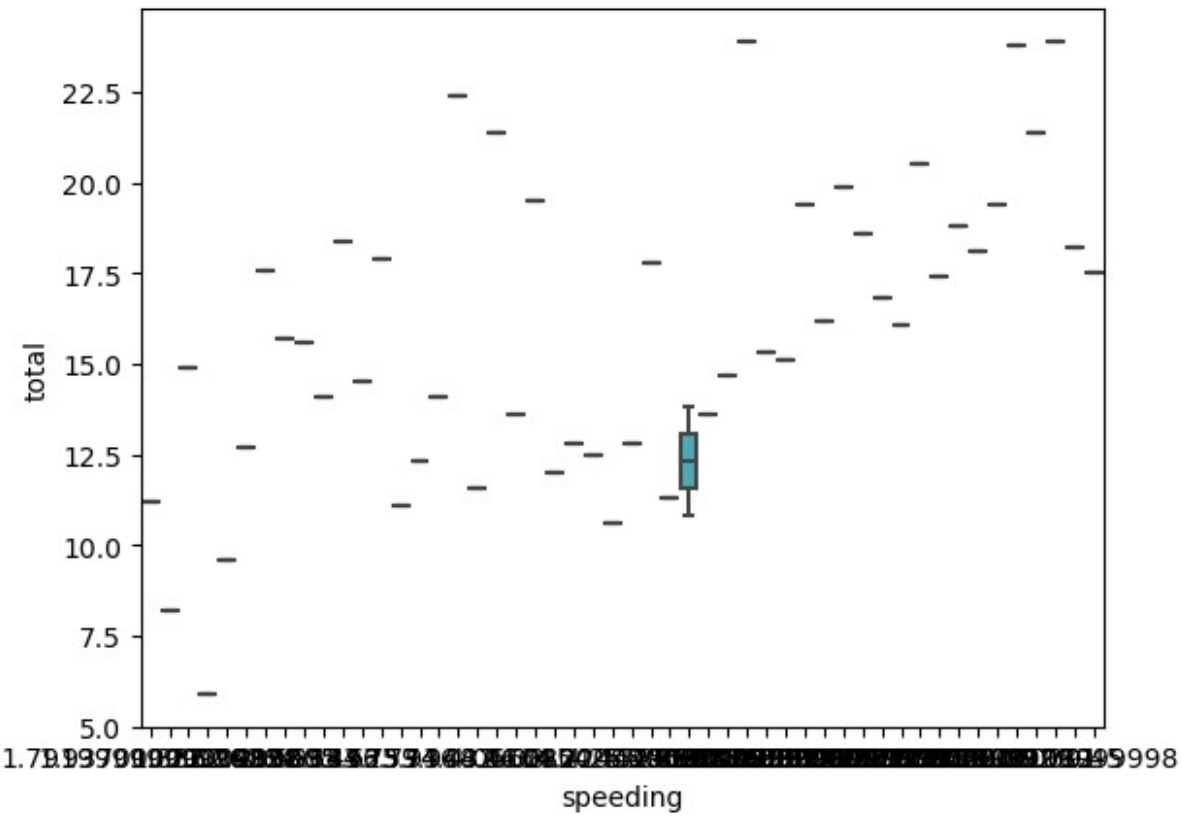

```
sns.boxplot(x="alcohol",y="total",data=dff)
```

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



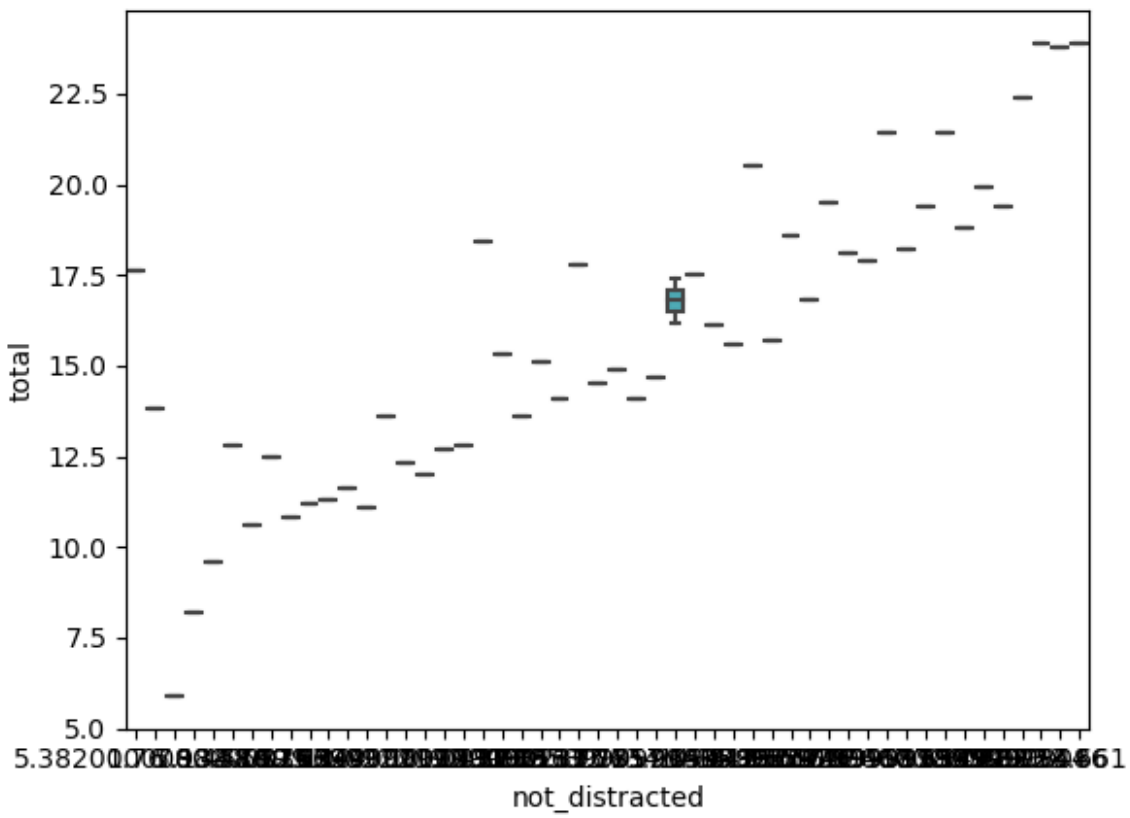

```
sns.boxplot(x="speeding",y="total",data=dff)
```

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




```
sns.boxplot(x="not_distracted",y="total",data=dff)
```

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




```
cor=dff.corr()
cor
```

```
C:\Users\mrmel\AppData\Local\Temp\ipykernel_4704\2441568840.py:1:
FutureWarning: The default value of numeric_only in DataFrame.corr is
deprecated. In a future version, it will default to False. Select only
valid columns or specify the value of numeric_only to silence this
warning.
  cor=dff.corr()
```

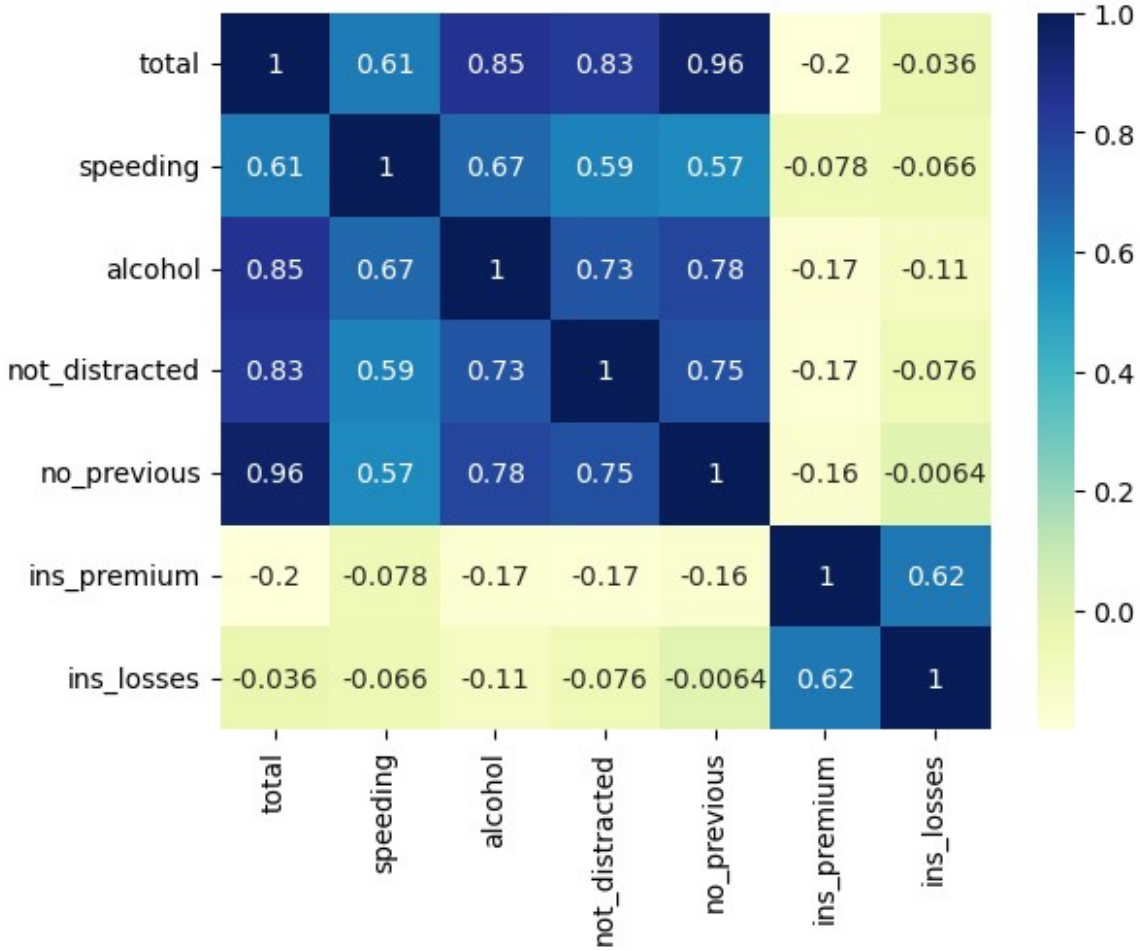
```
                   total  speeding   alcohol  not_distracted
no_previous  \
total           1.000000  0.611548  0.852613        0.827560
0.956179
speeding        0.611548  1.000000  0.669719        0.588010
0.571976
alcohol         0.852613  0.669719  1.000000        0.732816
0.783520
not_distracted  0.827560  0.588010  0.732816        1.000000
0.747307
no_previous     0.956179  0.571976  0.783520        0.747307
1.000000
ins_premium    -0.199702 -0.077675 -0.170612       -0.174856    -
0.156895
```

```
ins_losses     -0.036011 -0.065928 -0.112547       -0.075970    -
0.006359
```

	ins_premium	ins_losses
total	-0.199702	-0.036011
speeding	-0.077675	-0.065928
alcohol	-0.170612	-0.112547
not_distracted	-0.174856	-0.075970
no_previous	-0.156895	-0.006359
ins_premium	1.000000	0.623116
ins_losses	0.623116	1.000000

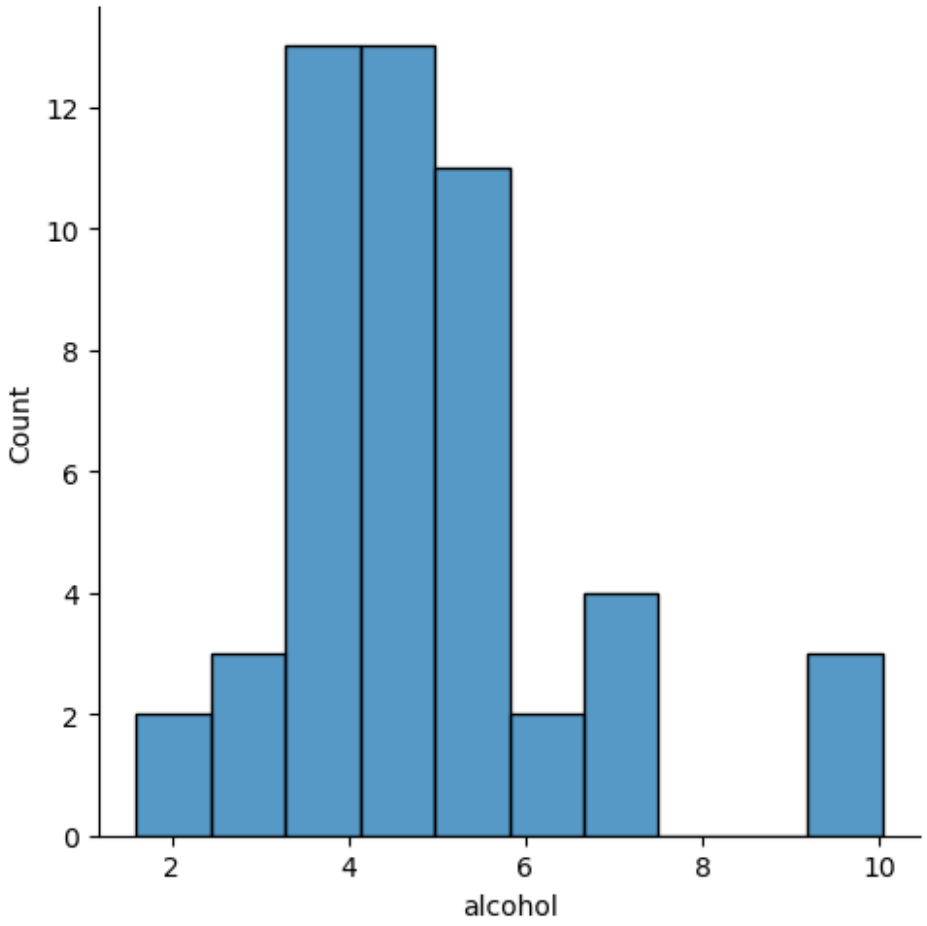
```
sns.heatmap(cor,annot=True,cmap="YlGnBu")
```

```
<Axes: >
```



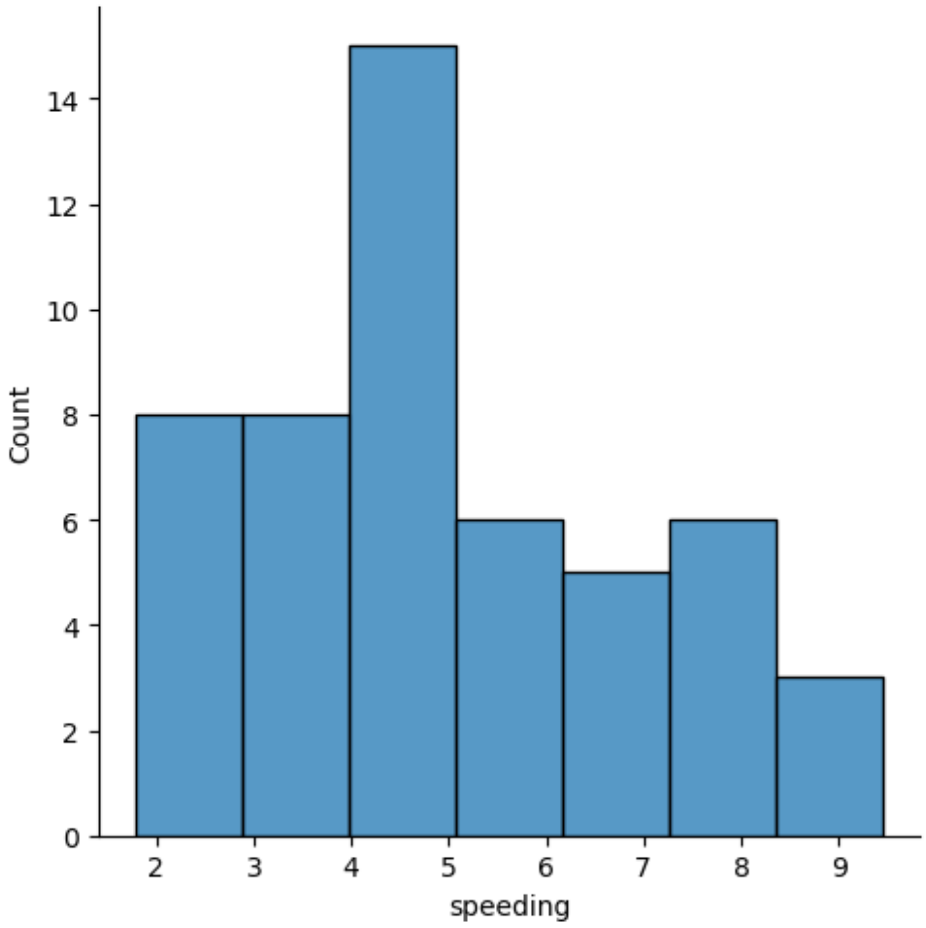

```
sns.displot(dff["alcohol"])
```

```
<seaborn.axisgrid.FacetGrid at 0x272d49c3d90>
```



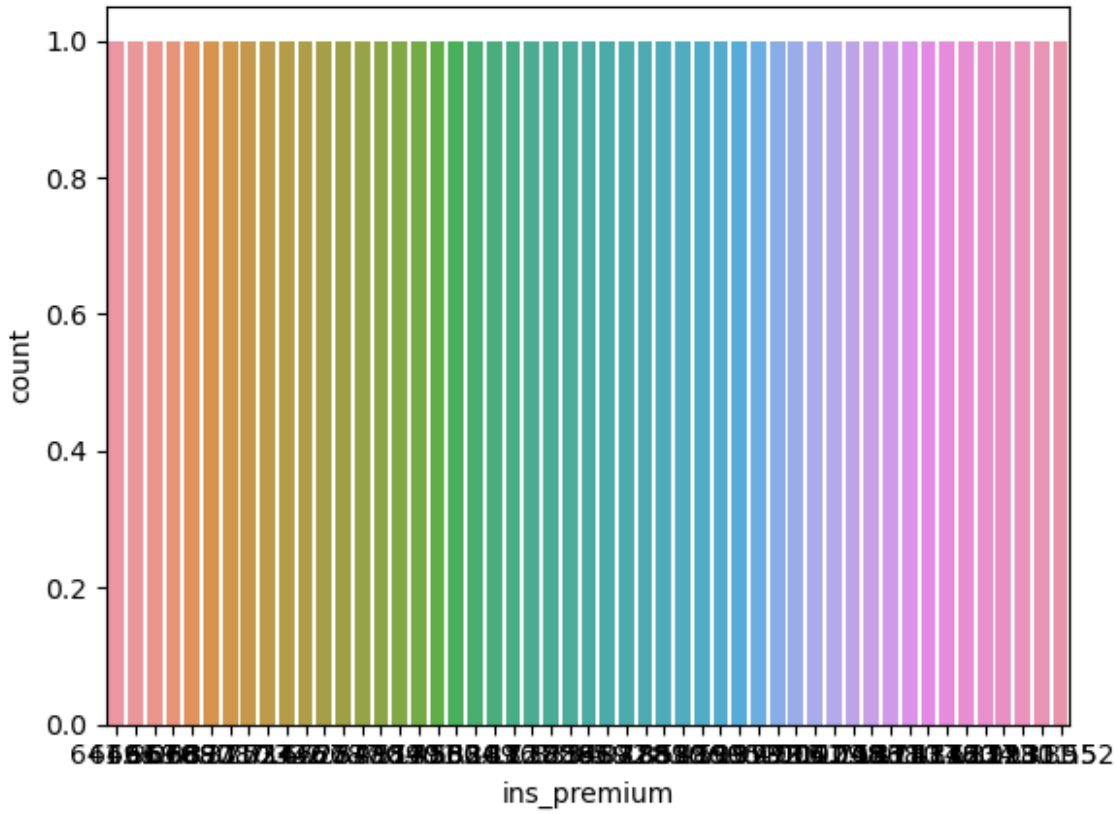

```
sns.displot(dff["speeding"])
```

```
<seaborn.axisgrid.FacetGrid at 0x272d330d2a0>
```




```
sns.countplot(x="ins_premium",data=dff)
```

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


1.0
0.8
0.6
0.4
0.2
0.0
count
ins_premium