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Campus : VIT - AP

```
import seaborn as sns
print(sns.get_dataset_names())
```

```
['anagrams', 'anscombe', 'attention', 'brain_networks', 'car_crashes',
'diamonds', 'dots', 'dowjones', 'exercise', 'flights', 'fmri',
'geyser', 'glue', 'healthexp', 'iris', 'mpg', 'penguins', 'planets',
'seaice', 'taxis', 'tips', 'titanic']
```

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

```
    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
4	165.63	CA
5	139.91	CO
6	167.02	CT
7	151.48	DE
8	136.05	DC
9	144.18	FL
10	142.80	GA
11	120.92	HI
12	82.75	ID
13	139.15	IL
14	108.92	IN
15	114.47	IA
16	133.80	KS
17	137.13	KY
18	194.78	LA
19	96.57	ME
20	192.70	MD
21	135.63	MA
22	152.26	MI
23	133.35	MN
24	155.77	MS
25	144.45	MO
26	85.15	MT
27	114.82	NE

```
28      138.71     NV
29      120.21     NH
30      159.85     NJ
31      120.75     NM
32      150.01     NY
33      127.82     NC
34      109.72     ND
35      133.52     OH
36      178.86     OK
37      104.61     OR
38      153.86     PA
39      148.58     RI
40      116.29     SC
41       96.87     SD
42      155.57     TN
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
```

```
x = df.head(5)
x
```

```
   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


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

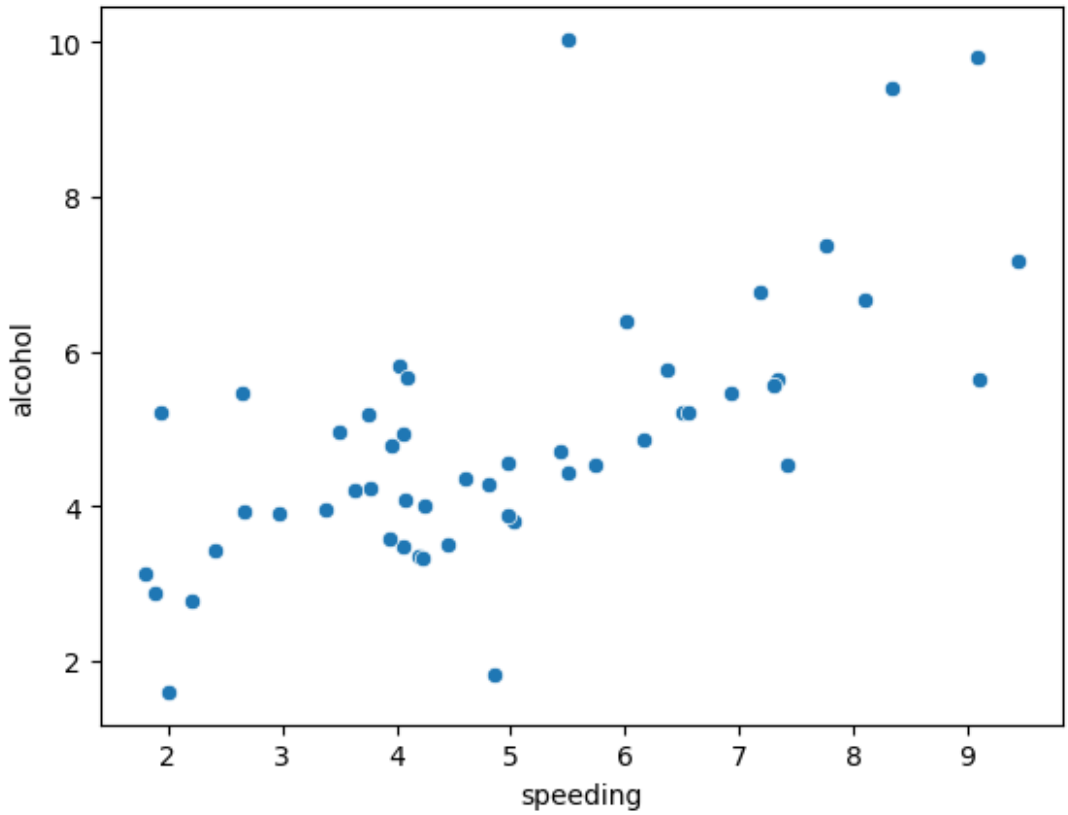
```
df.info()
```

```
<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
```

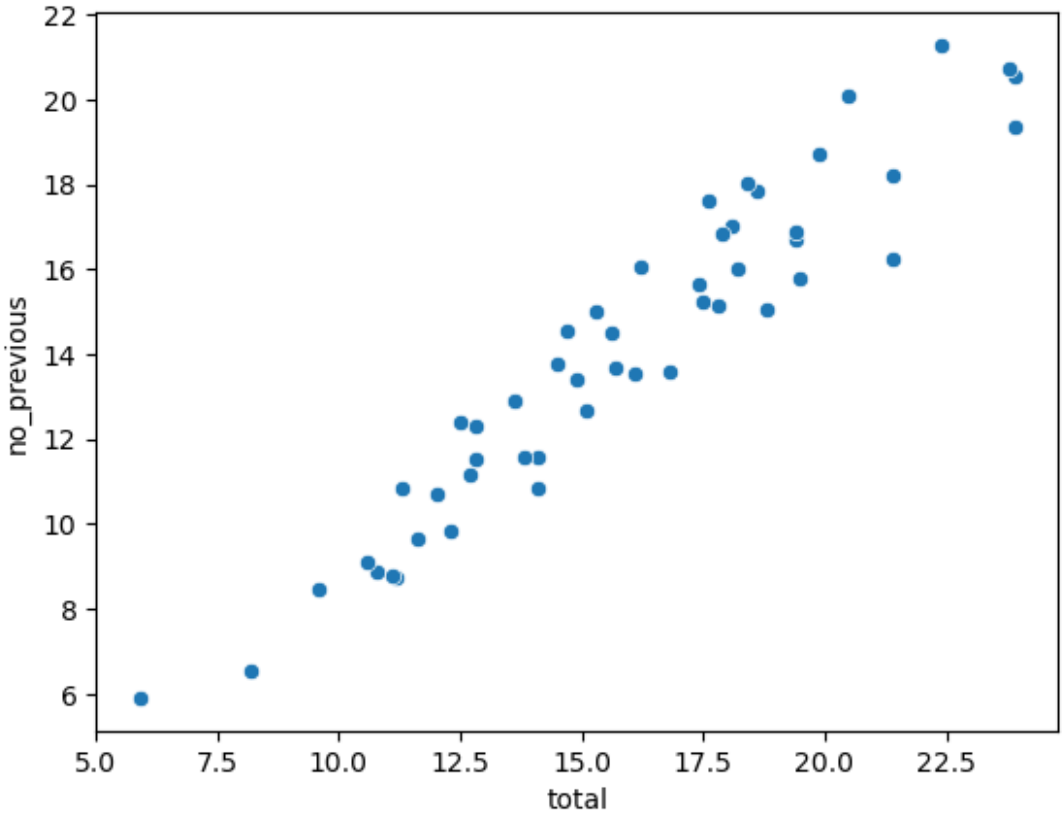
```
sns.scatterplot(x="speeding",y="alcohol",data=df)
# inference
#most of the drivers who drunk more alcohol have droven with more speed
```

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



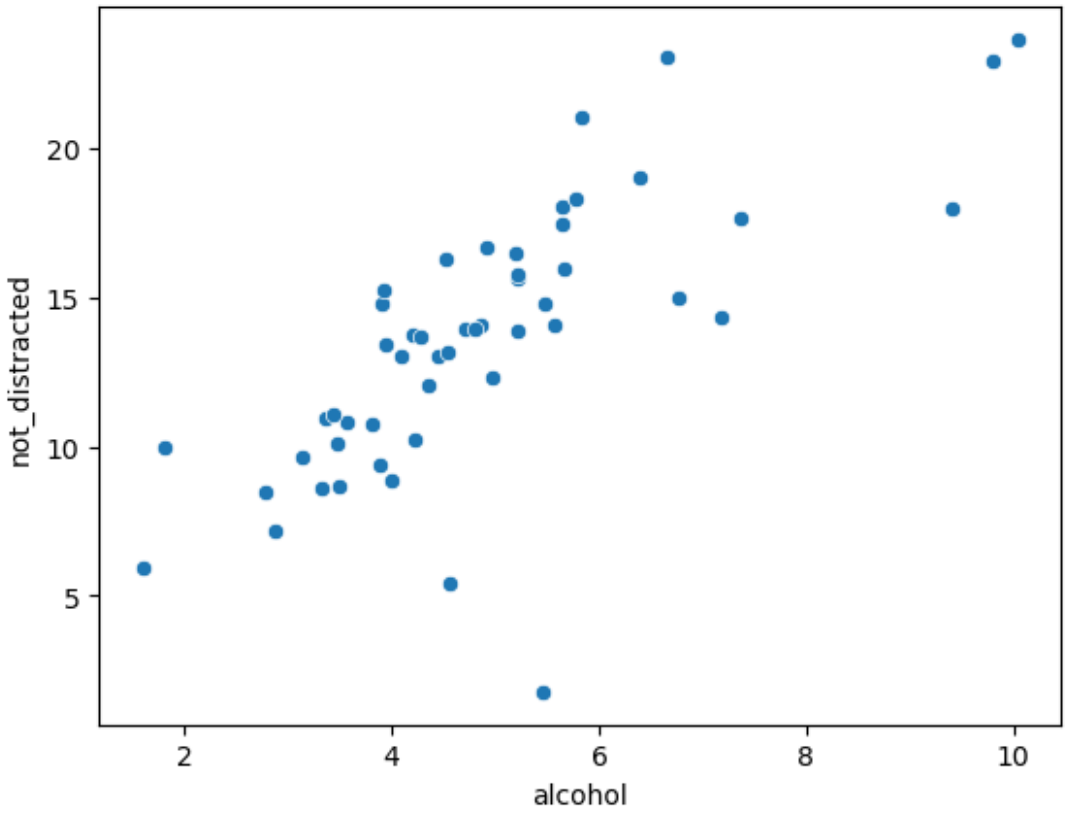

```
sns.scatterplot(x="total",y="no_previous",data=df)
# the given plot shows thge relation between no previous and total
```

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



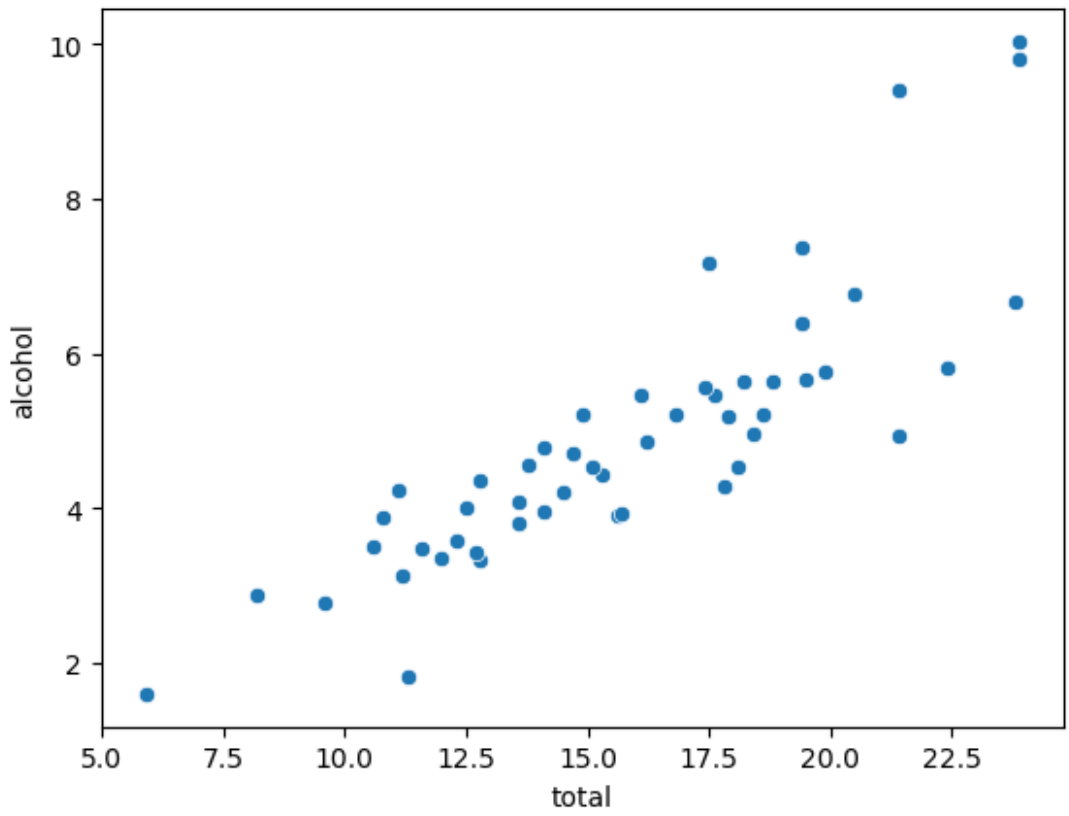

```
sns.scatterplot(x="alcohol",y="not_distracted",data=df)
#inference
# people who drunk less alochol they are less not_distracted
```

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



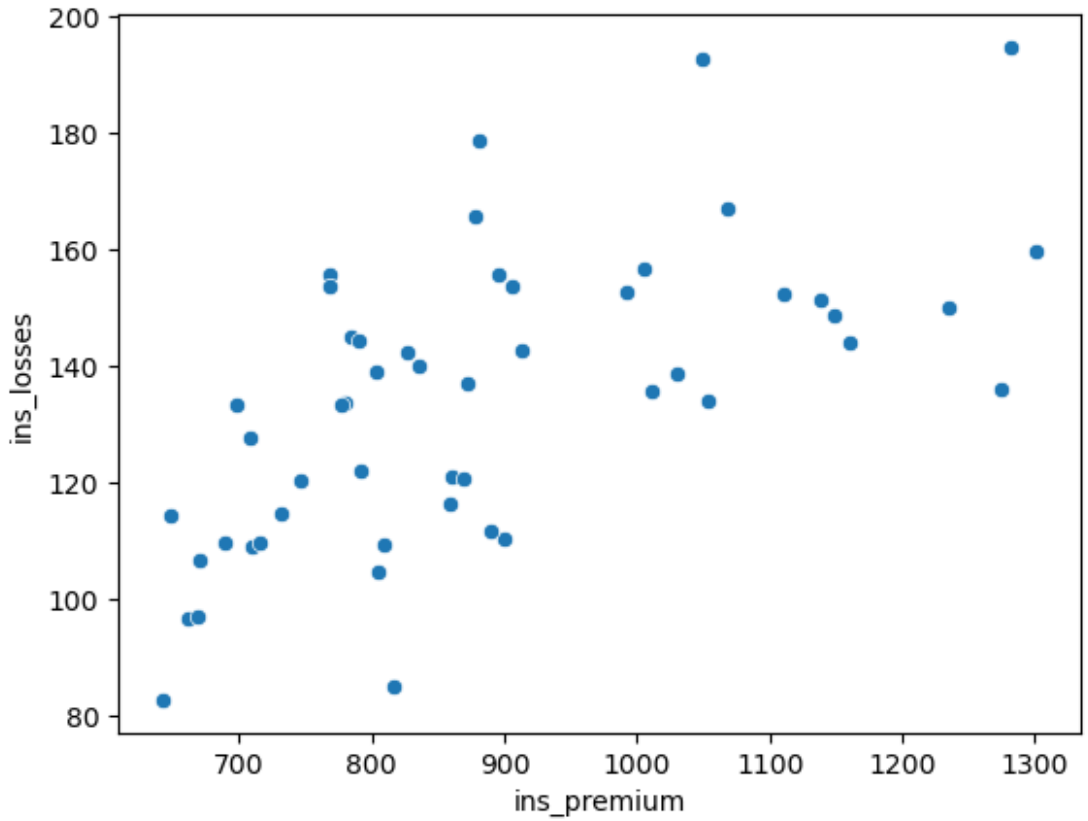

```
sns.scatterplot(x="total",y="alcohol",data=df)
#inference
# alocohol content increases crashes also increases
```

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



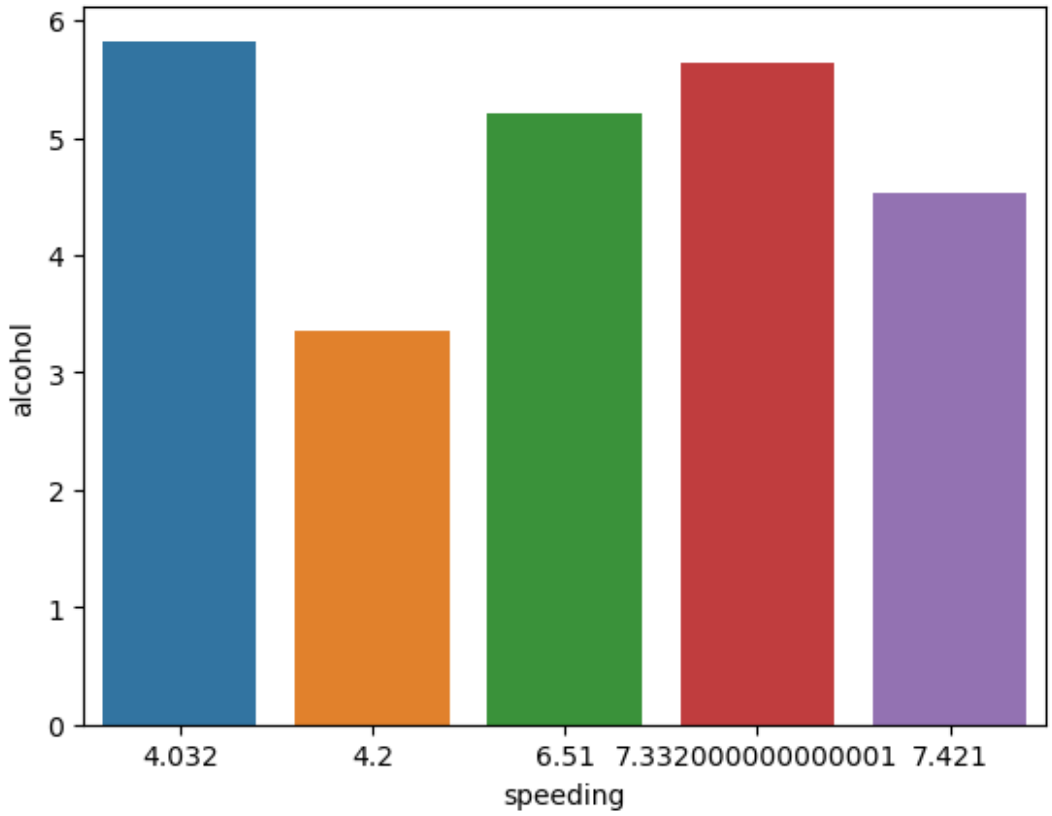

```
sns.scatterplot(x='ins_premium',y='ins_losses',data=df)
# people who paid less insurance got less loss
```

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



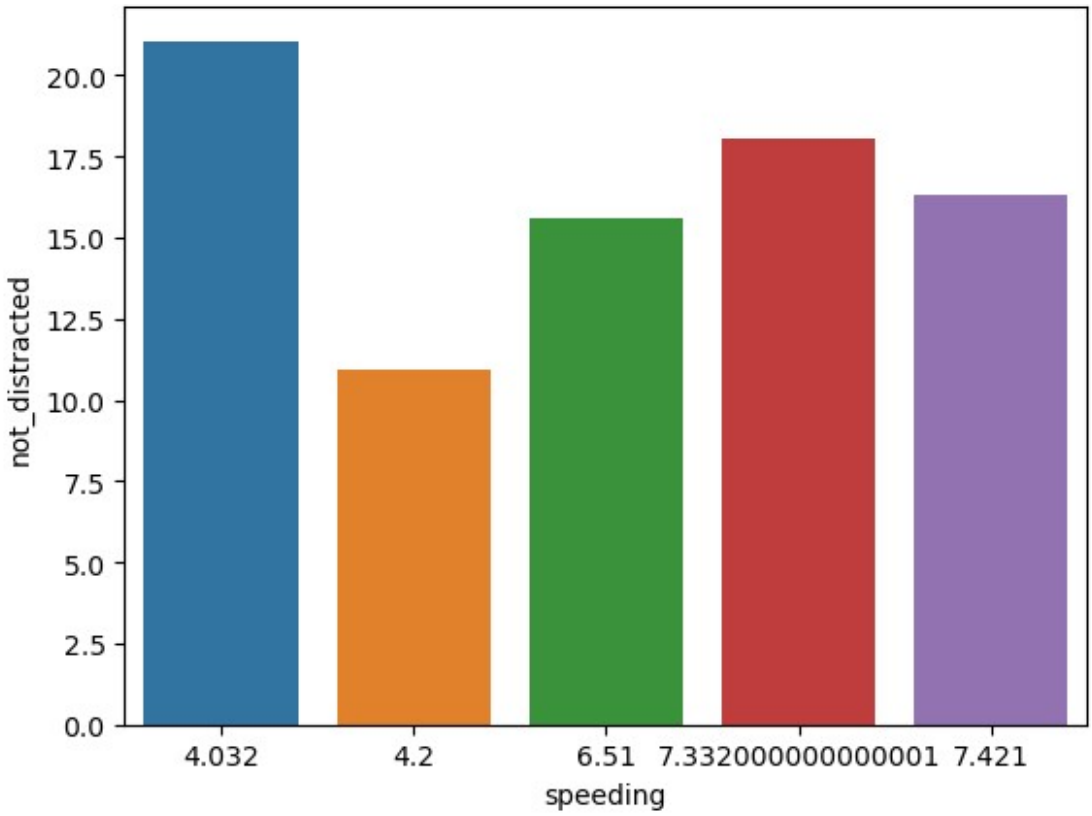

```
sns.barplot(data=x,x="speeding",y="alcohol",ci=None)
# Inference
most of the drivers who drank more alcohol have droven with more speed
```

```
C:\Users\hp\AppData\Local\Temp\ipykernel_4456\1777853704.py:1:
FutureWarning:

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

  sns.barplot(data=x,x="speeding",y="alcohol",ci=None)

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




```
sns.barplot(data=x,x="speeding",y="not_distracted",ci=None)
# inference
# the persons who are driving with less speed are not distracted
```

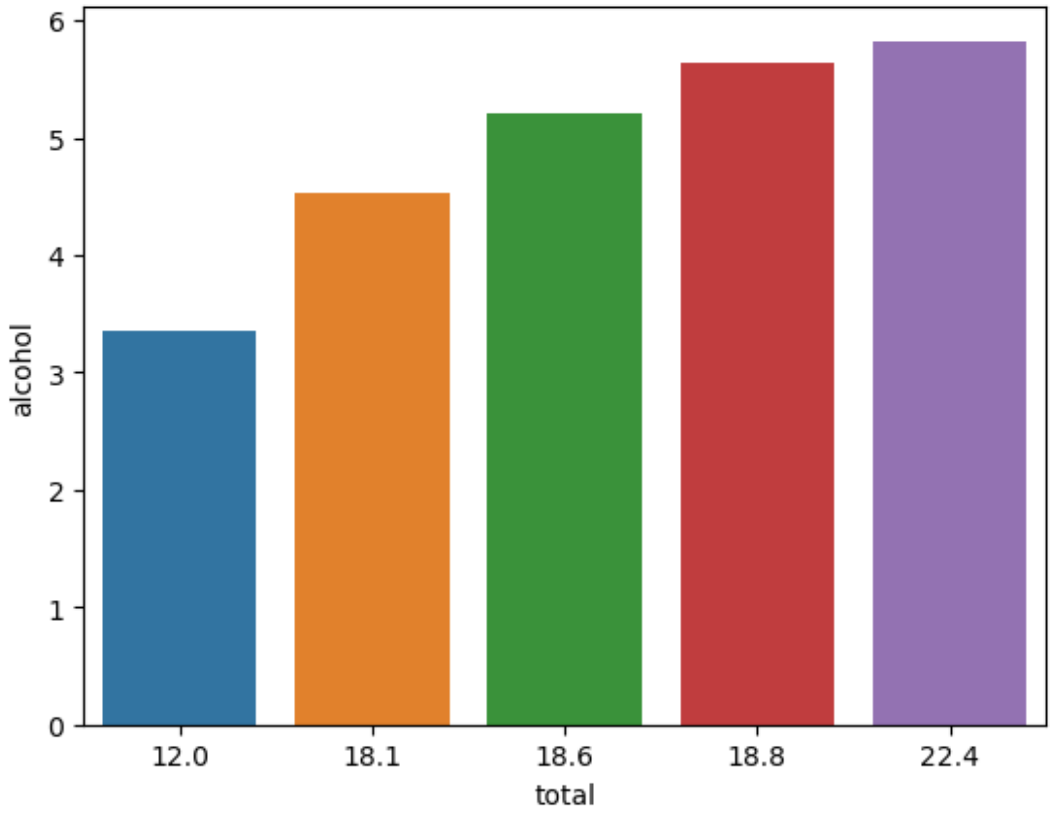
```
C:\Users\hp\AppData\Local\Temp\ipykernel_4456\1143020830.py:1:
FutureWarning:

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

  sns.barplot(data=x,x="speeding",y="not_distracted",ci=None)

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




```
sns.barplot(data=x,x="total",y="alcohol",ci=None)
#Inference
# no of accidents increases as drinking more alcohol
```

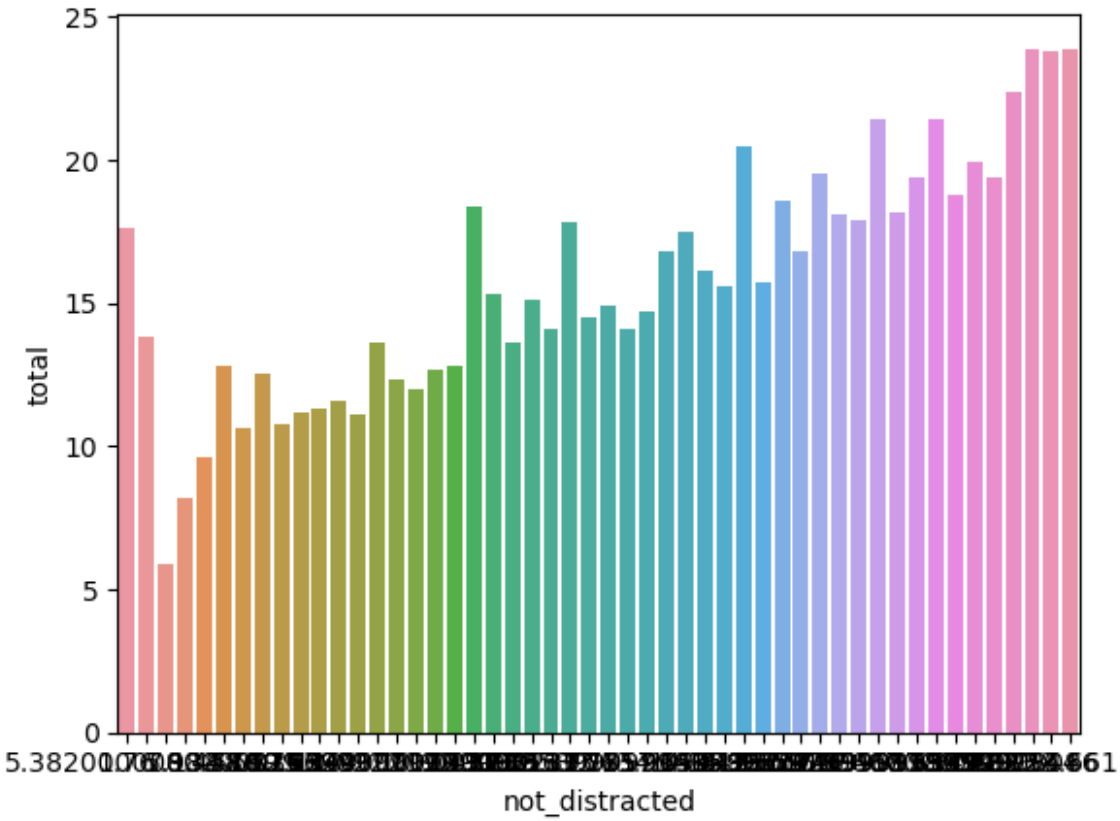
```
C:\Users\hp\AppData\Local\Temp\ipykernel_4456\2713533087.py:1:
FutureWarning:

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

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

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




```
sns.barplot(data=df,x="not_distracted",y="total",ci=None)
```

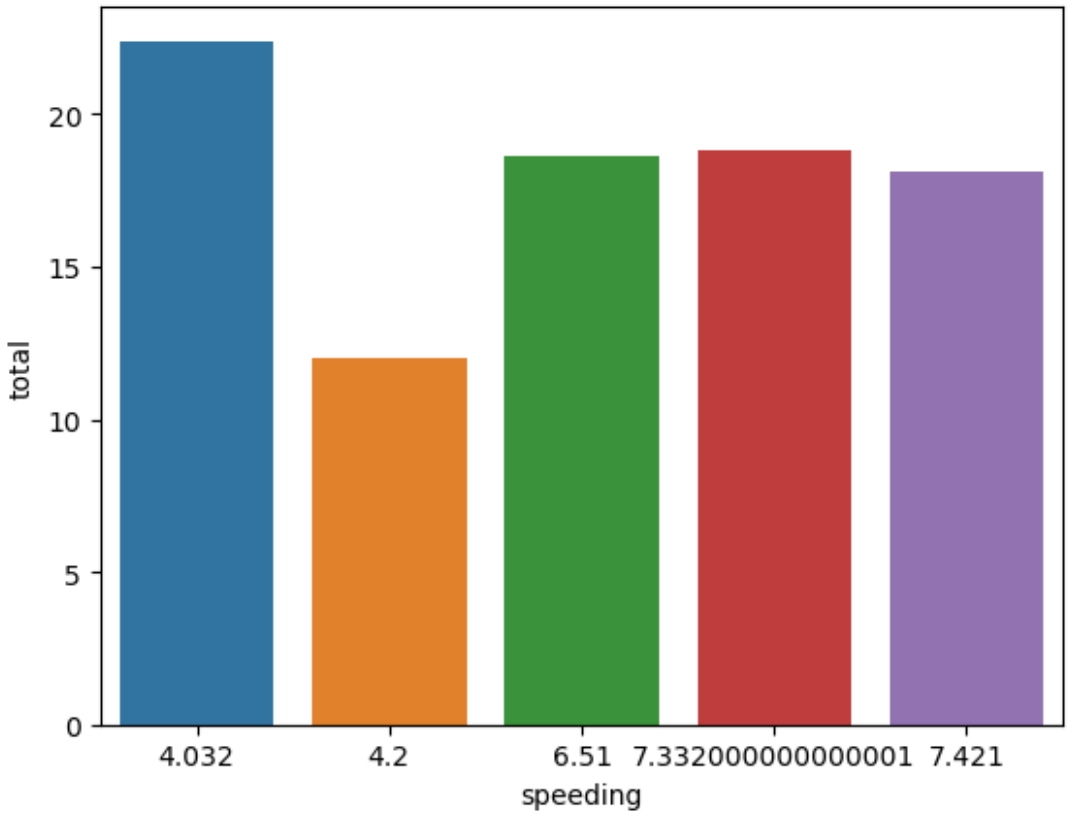
```
C:\Users\hp\AppData\Local\Temp\ipykernel_4456\3023431553.py:1:
FutureWarning:

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

  sns.barplot(data=df,x="not_distracted",y="total",ci=None)

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




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

```
C:\Users\hp\AppData\Local\Temp\ipykernel_4456\3678240287.py:1:
FutureWarning:

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

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

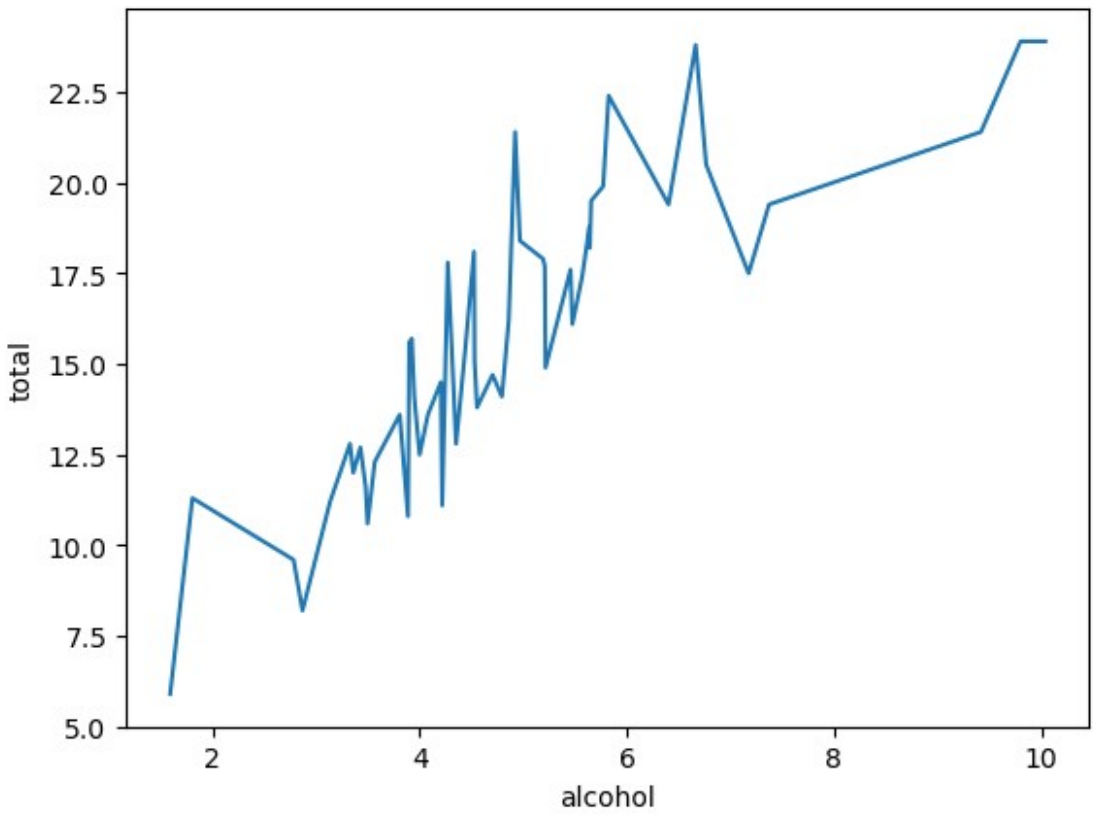
```
<Axes: xlabel='speeding', ylabel='total'>
```




```
sns.lineplot(x='alcohol',y='total',data=df,ci=None)
# as the alcohol consumption increases total crashes also increases
```

```
C:\Users\hp\AppData\Local\Temp\ipykernel_2372\2372459405.py:1:
FutureWarning:

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

  sns.lineplot(x='alcohol',y='total',data=df,ci=None)
```

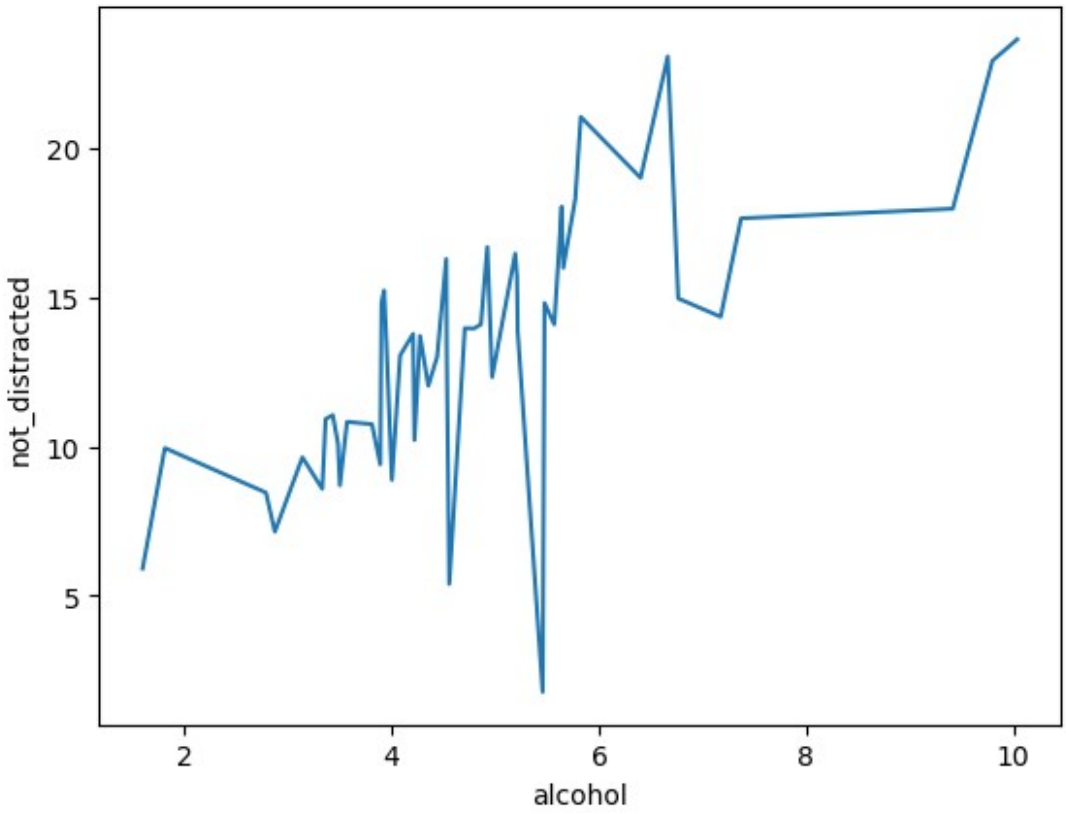
```
<Axes: xlabel='alcohol', ylabel='total'>
```




```
sns.lineplot(x='alcohol',y='not_distracted',data=df,ci=None)
```

```
C:\Users\hp\AppData\Local\Temp\ipykernel_4456\3085692794.py:1:
FutureWarning:

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

  sns.lineplot(x='alcohol',y='not_distracted',data=df,ci=None)
```

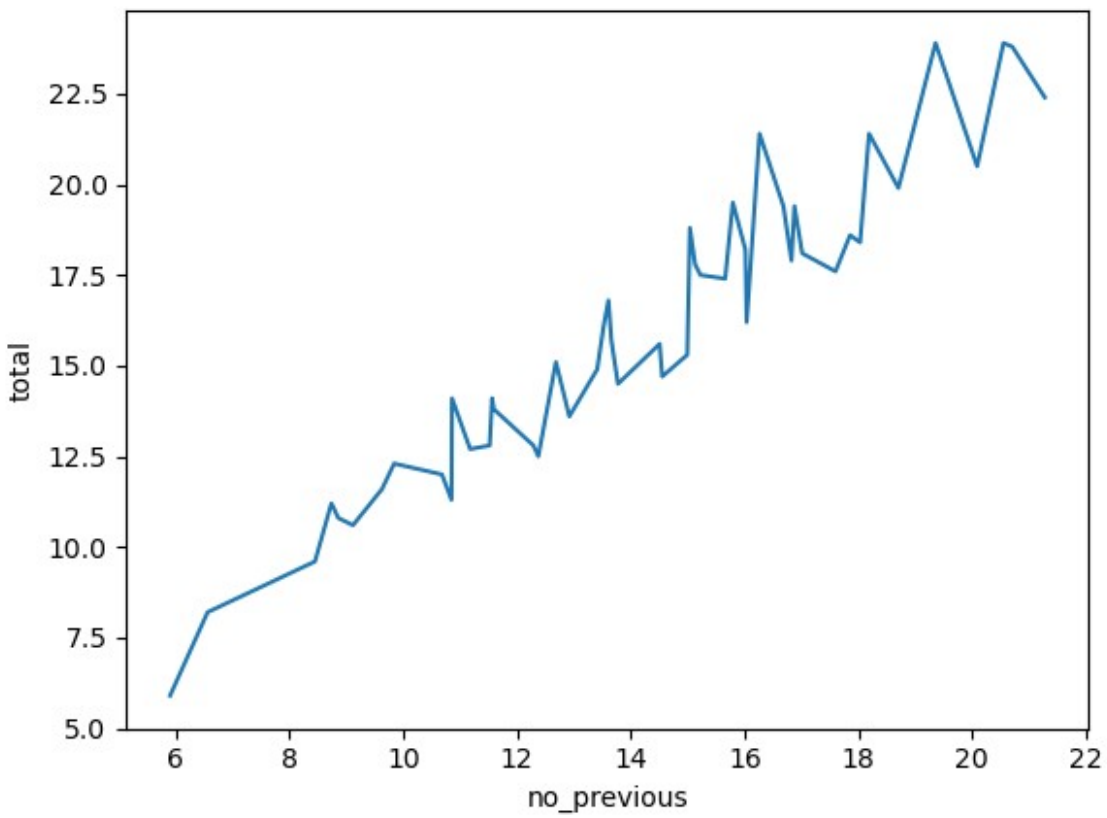
```
<Axes: xlabel='alcohol', ylabel='not_distracted'>
```




```
sns.lineplot(x='no_previous',y='total',data=df,ci=None)
```

```
C:\Users\hp\AppData\Local\Temp\ipykernel_4456\1903628411.py:1:
FutureWarning:

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

  sns.lineplot(x='no_previous',y='total',data=df,ci=None)
```

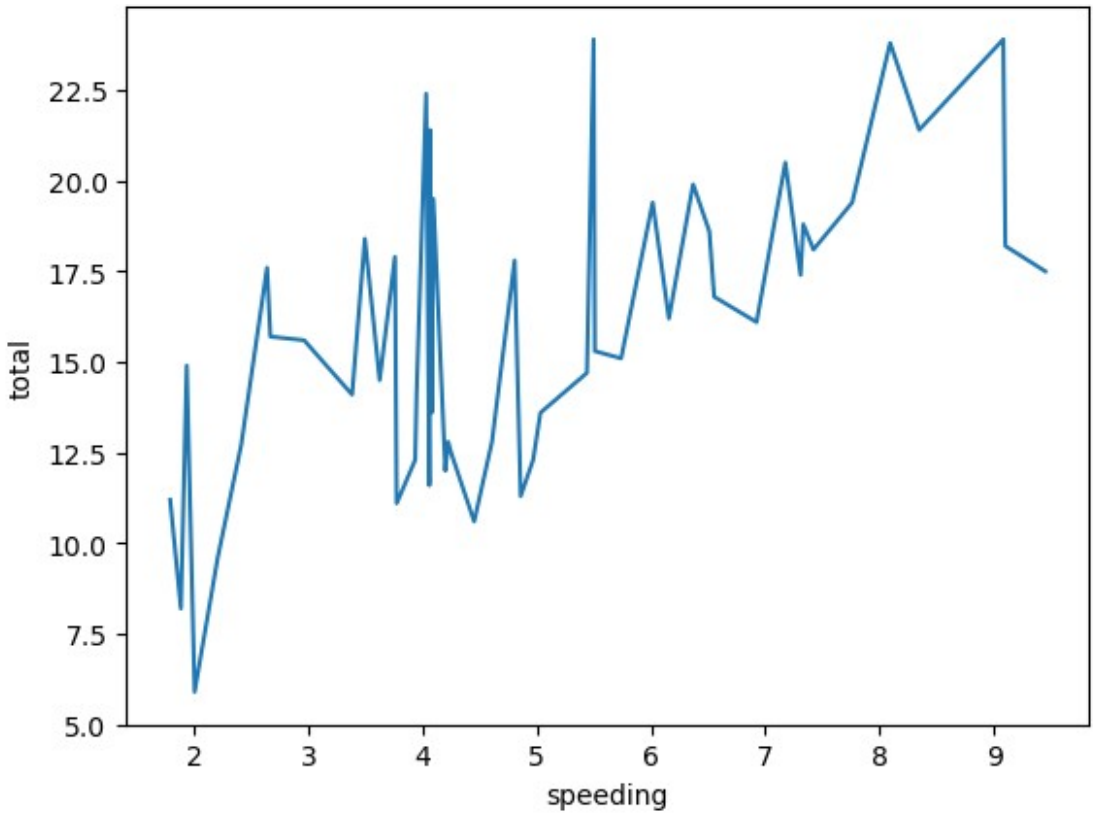
```
<Axes: xlabel='no_previous', ylabel='total'>
```




```
sns.lineplot(x='speeding',y='total',data=df,ci=None)
# In most of the cases as the speed increases total crashes also
increases
```

```
C:\Users\hp\AppData\Local\Temp\ipykernel_2372\2174020548.py:1:
FutureWarning:

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

  sns.lineplot(x='speeding',y='total',data=df,ci=None)
```

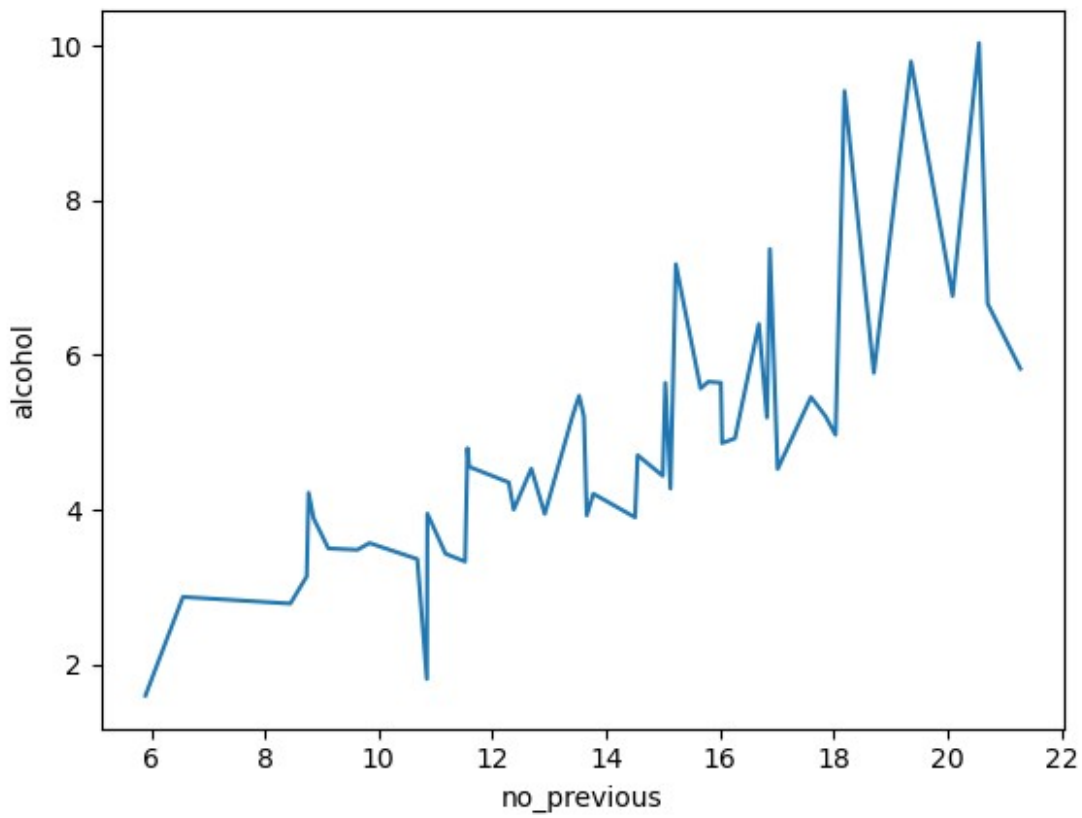
```
<Axes: xlabel='speeding', ylabel='total'>
```




```
sns.lineplot(x='no_previous',y='alcohol',data=df,ci=None)
# the person  with no previous drank more alcohol
```

```
C:\Users\hp\AppData\Local\Temp\ipykernel_4456\3484007986.py:1:
FutureWarning:

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

  sns.lineplot(x='no_previous',y='alcohol',data=df,ci=None)
```

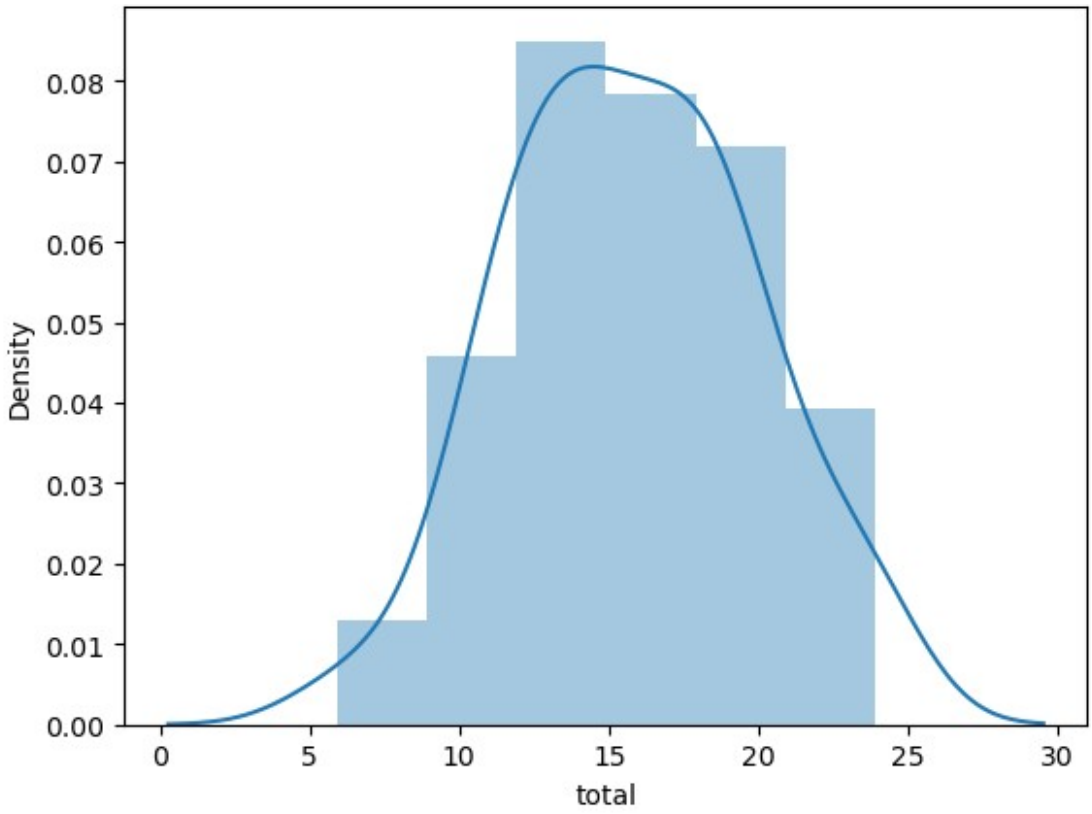
```
<Axes: xlabel='no_previous', ylabel='alcohol'>
```




```
sns.distplot(df["total"])
```

```
C:\Users\hp\AppData\Local\Temp\ipykernel_2372\1102674835.py: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["total"])
```

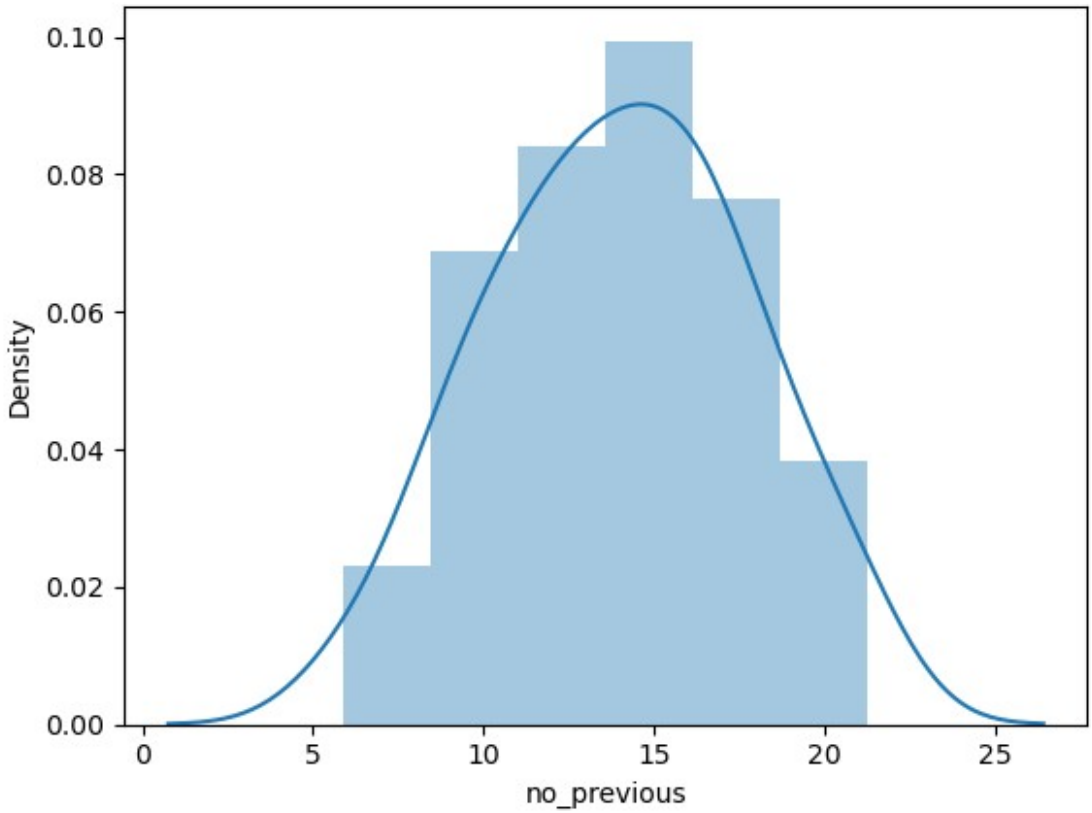
```
<Axes: xlabel='total', ylabel='Density'>
```




```
sns.distplot(df["no_previous"])
```

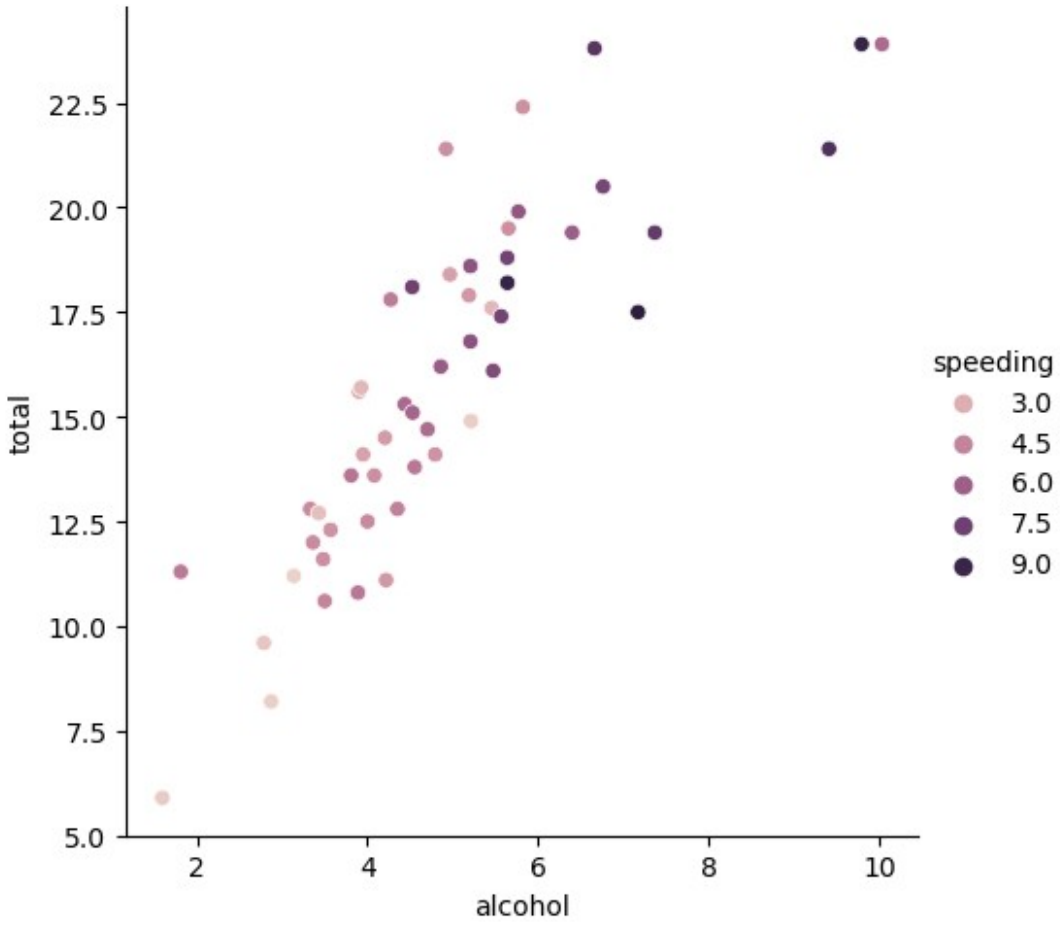
```
C:\Users\hp\AppData\Local\Temp\ipykernel_4456\1806622040.py:1:
UserWarning:

`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["no_previous"])
```

```
<Axes: xlabel='no_previous', ylabel='Density'>
```



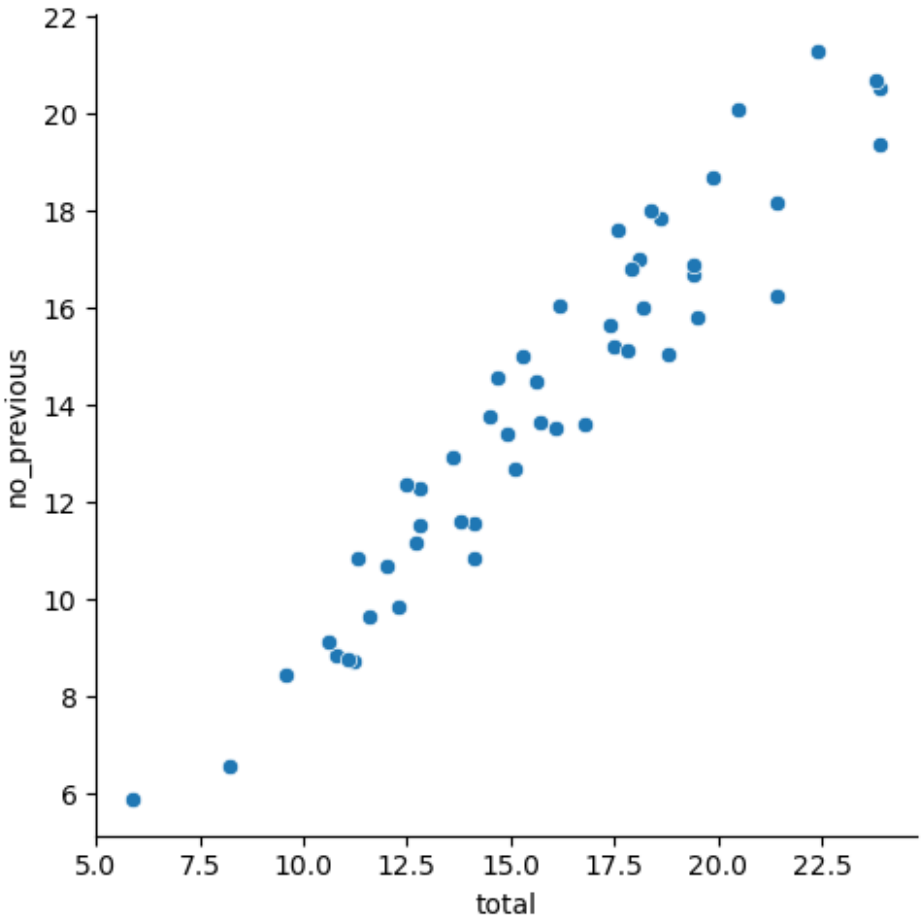

```
sns.relplot(x='alcohol',y='total',data=df,hue="speeding")
# As alcohol consumption increases total crashes also increases
```

```
<seaborn.axisgrid.FacetGrid at 0x1bb520b0490>
```



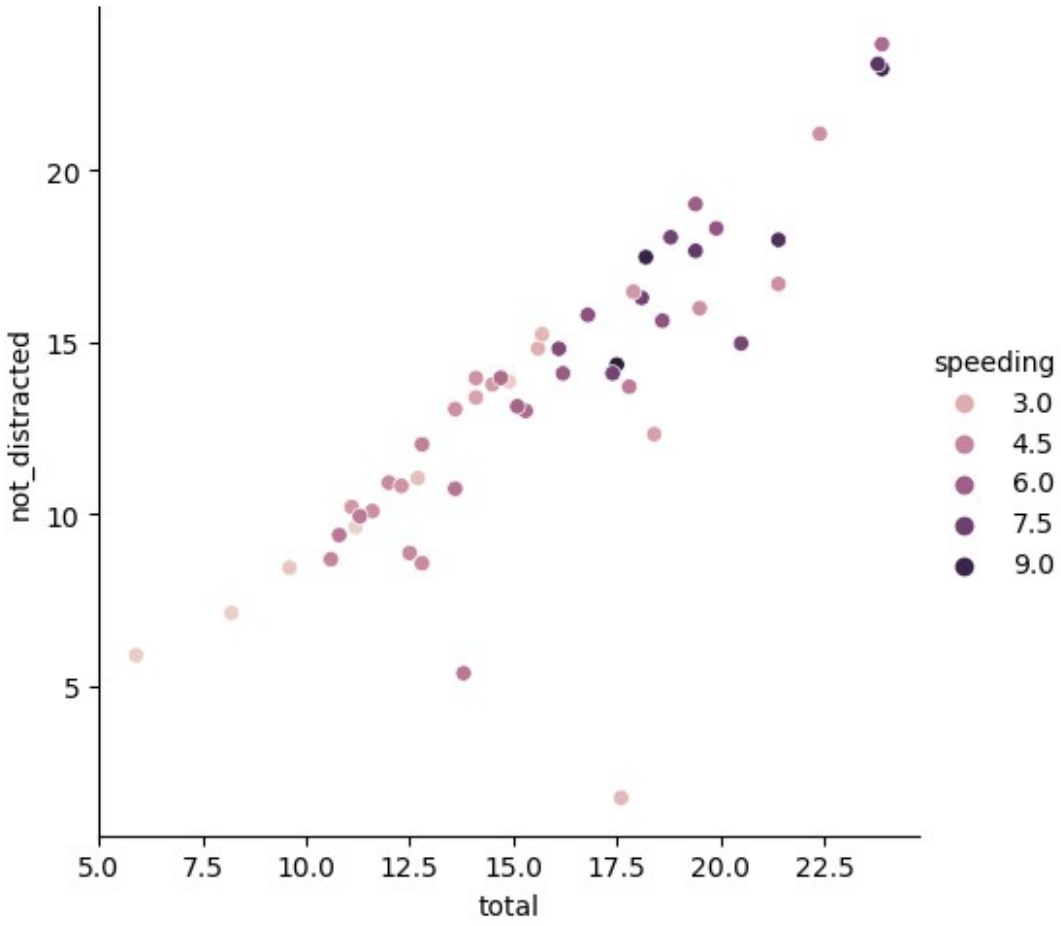

```
sns.relplot(x='total',y='no_previous',data=df)
```

```
<seaborn.axisgrid.FacetGrid at 0x2d41ca32c90>
```



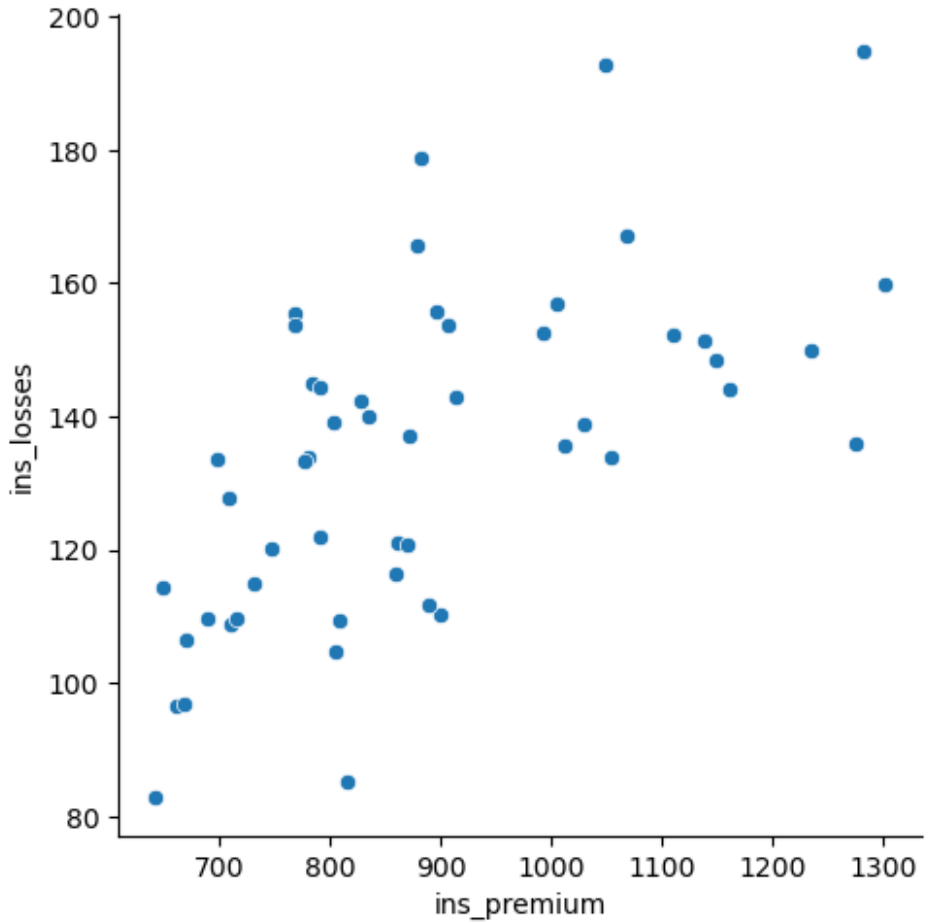

```
sns.relplot(x='total',y='not_distracted',data=df,hue="speeding")
```

```
<seaborn.axisgrid.FacetGrid at 0x2d40f89a690>
```



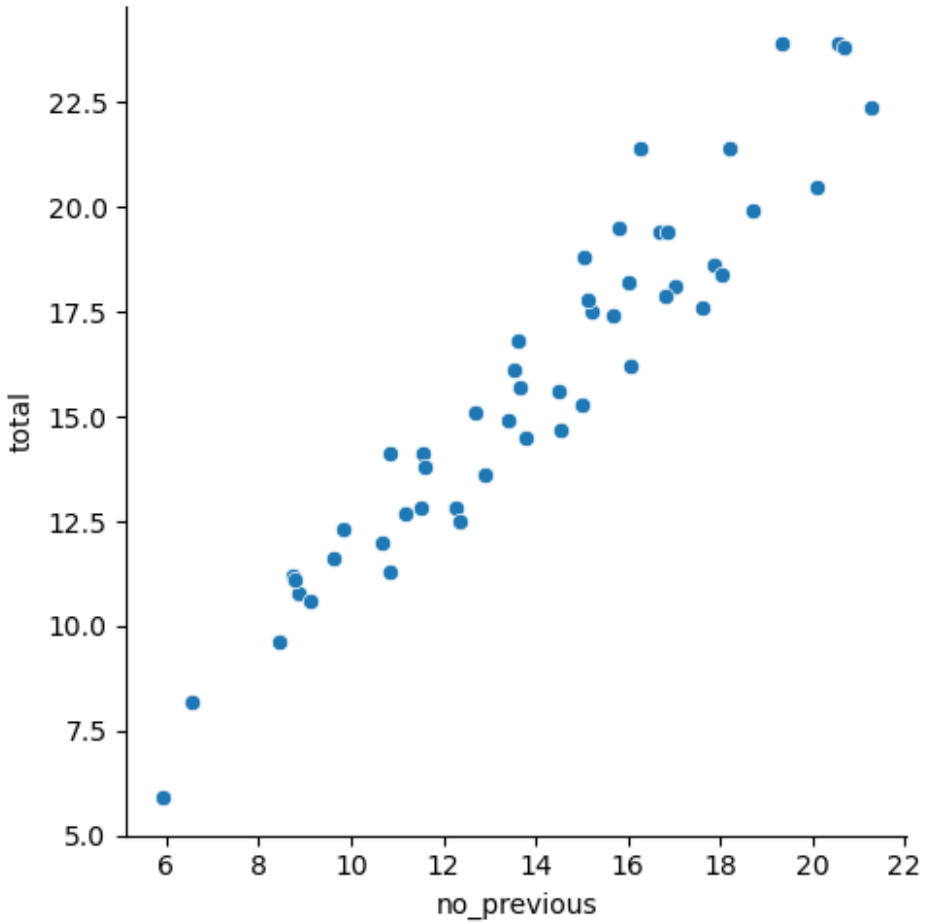

```
sns.relplot(x='ins_premium',y='ins_losses',data=df)
#people  who paid less insurance they faced more loss
```

```
<seaborn.axisgrid.FacetGrid at 0x2d40fb56990>
```



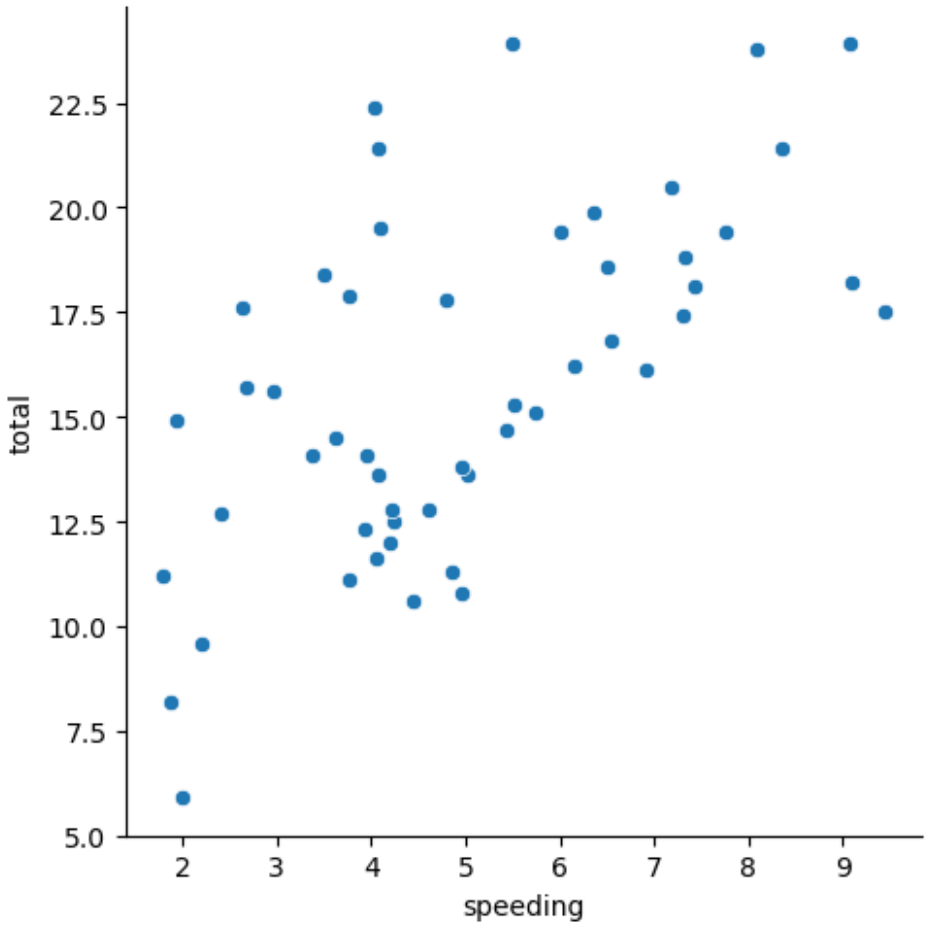

```
sns.relplot(x='no_previous',y='total',data=df)
```

```
<seaborn.axisgrid.FacetGrid at 0x2d412865050>
```




```
sns.relplot(x='speeding',y='total',data=df)
# people  who speed
```

```
<seaborn.axisgrid.FacetGrid at 0x2d411a82750>
```



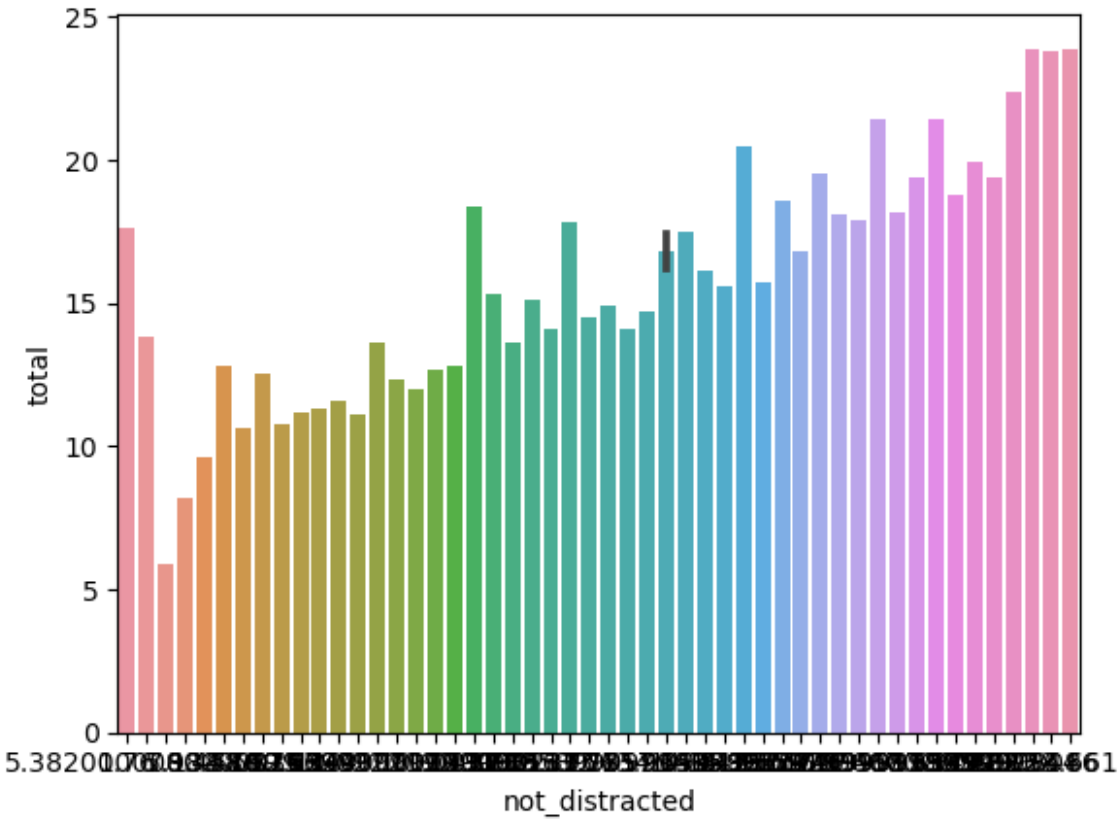

```
df["speeding"].value_counts()
```

```
4.968    2
7.332    1
9.100    1
5.439    1
4.060    1
1.792    1
3.496    1
3.936    1
6.552    1
5.497    1
3.948    1
6.368    1
4.224    1
3.774    1
8.346    1
9.082    1
6.014    1
4.095    1
7.760    1
```

```
4.859    1
4.080    1
2.413    1
4.452    1
8.092    1
1.937    1
6.923    1
7.421    1
2.640    1
6.510    1
4.032    1
4.200    1
5.032    1
6.156    1
2.006    1
3.759    1
2.964    1
9.450    1
5.508    1
4.608    1
3.625    1
2.669    1
4.806    1
4.066    1
7.175    1
5.738    1
4.250    1
1.886    1
3.384    1
2.208    1
7.308    1
Name: speeding, dtype: int64
```

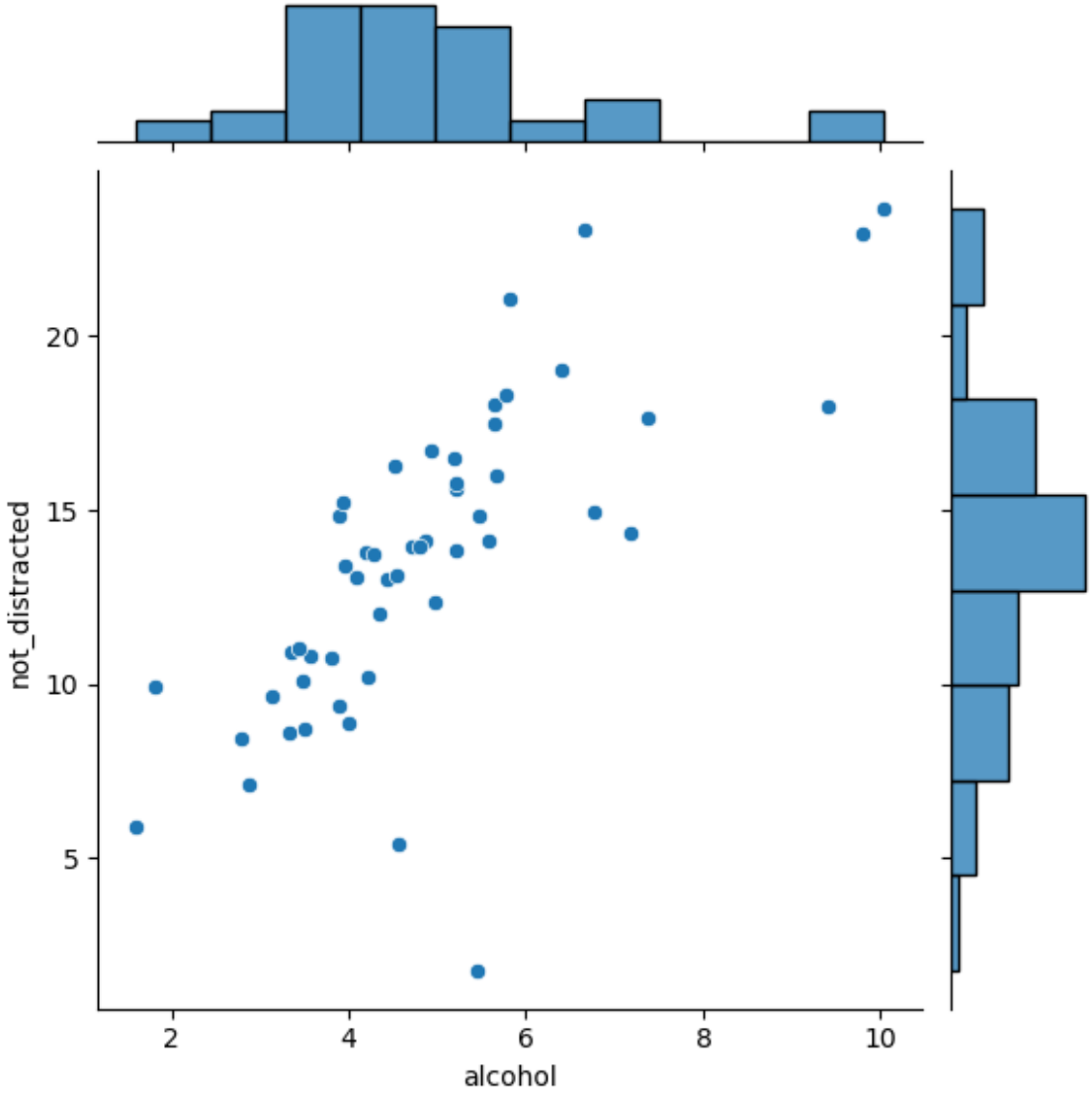
```
sns.barplot(data=df,x='not_distracted',y='total')
```

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



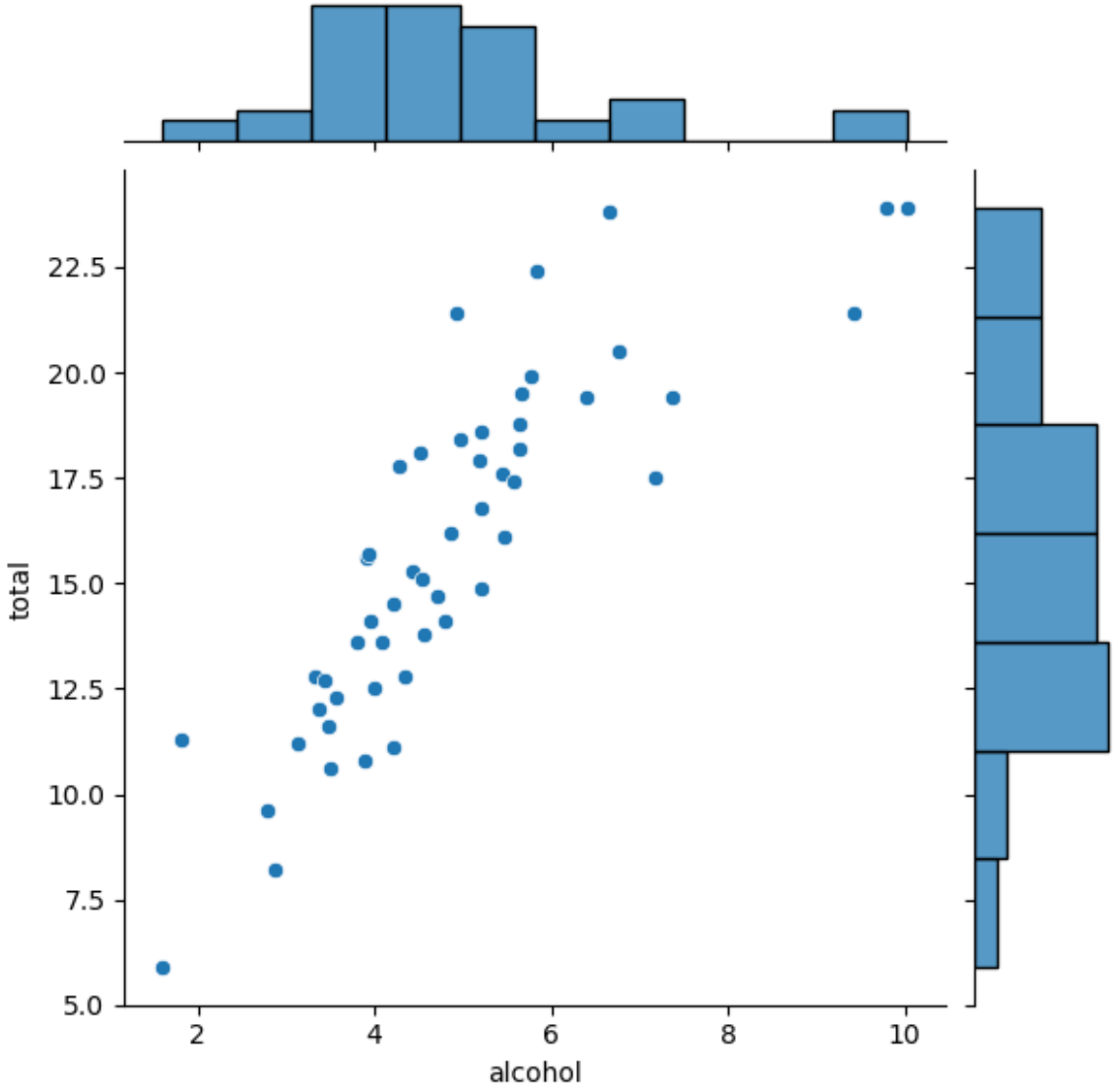

```
sns.jointplot(x="alcohol",y="not_distracted",data=df)
# people who consumed more alcohol at 10 they are not_distracted
```

```
<seaborn.axisgrid.JointGrid at 0x2d40fbaf450>
```



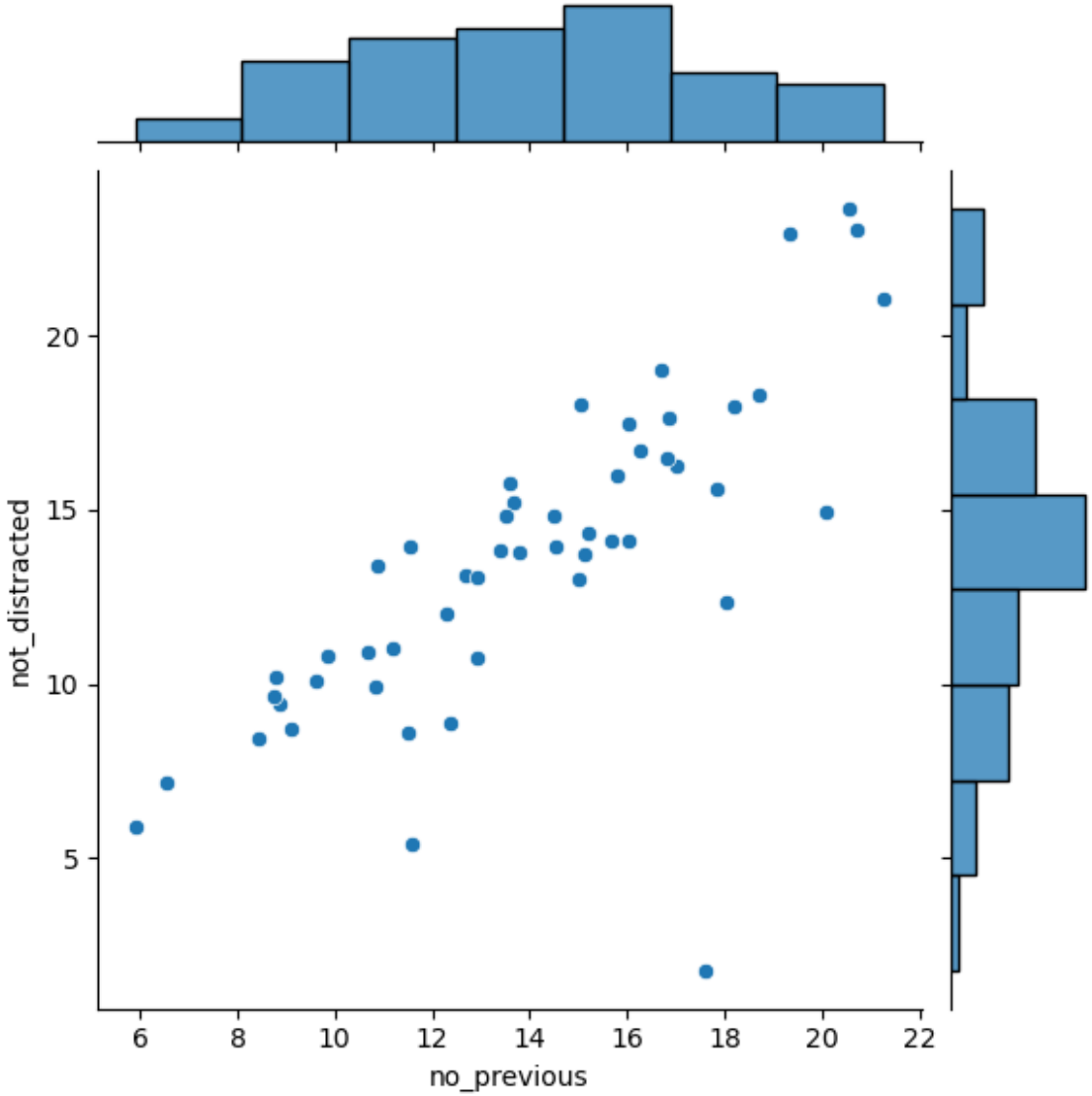

```
sns.jointplot(x="alcohol",y="total",data=df)
# with increase in alcohol consumption crashes also increased
```

```
<seaborn.axisgrid.JointGrid at 0x1bb0a0123d0>
```



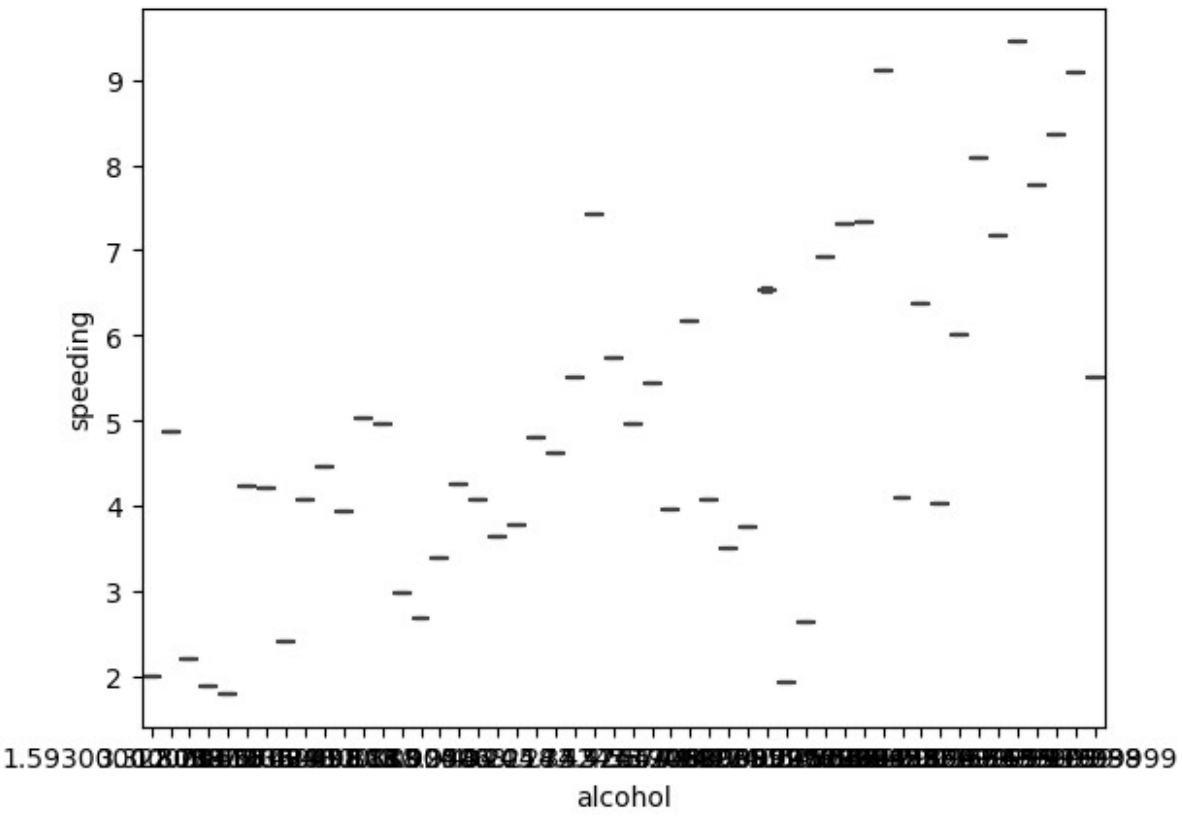

```
sns.jointplot(x="no_previous",y="not_distracted",data=df)
# as n0_previous increases not distracted also increases in most of
the cases
```

```
<seaborn.axisgrid.JointGrid at 0x2d4101371d0>
```



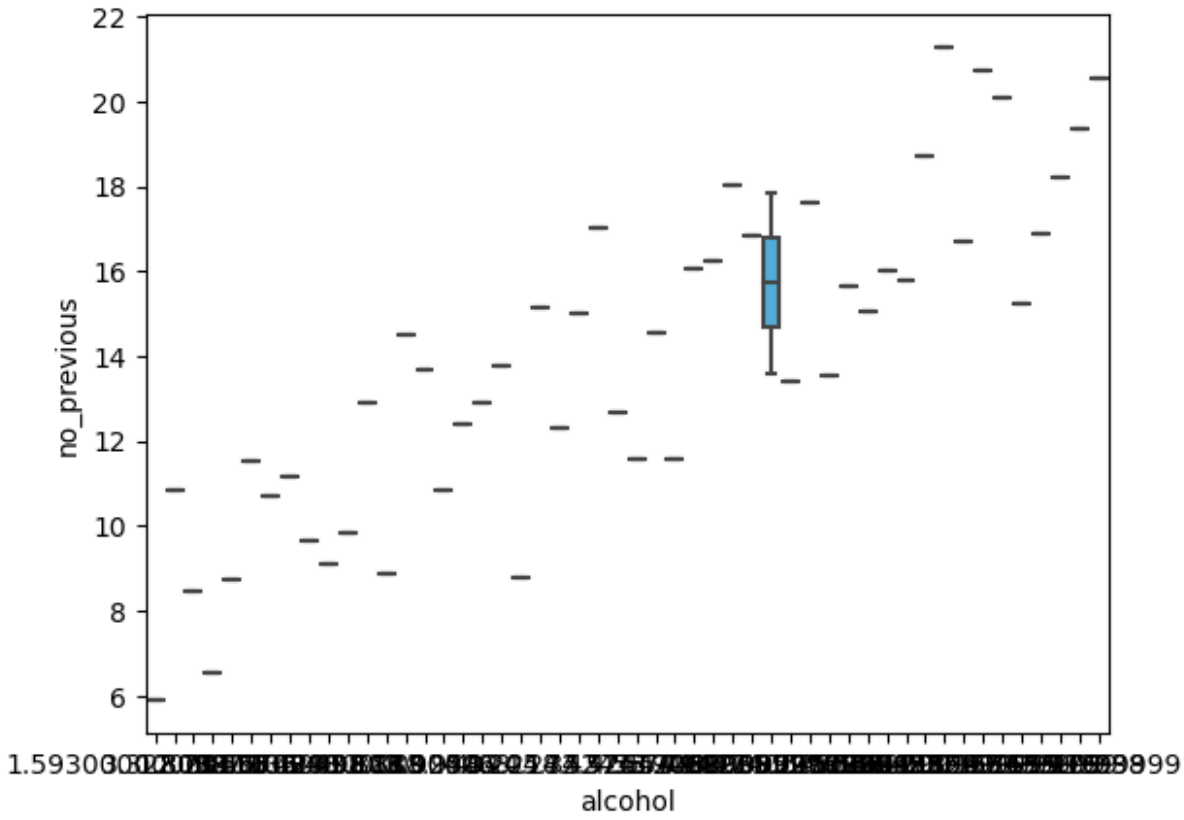

```
sns.boxplot(x="alcohol",y="speeding",data=df)
# people who drank more alcohol have droven with more speed
```

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



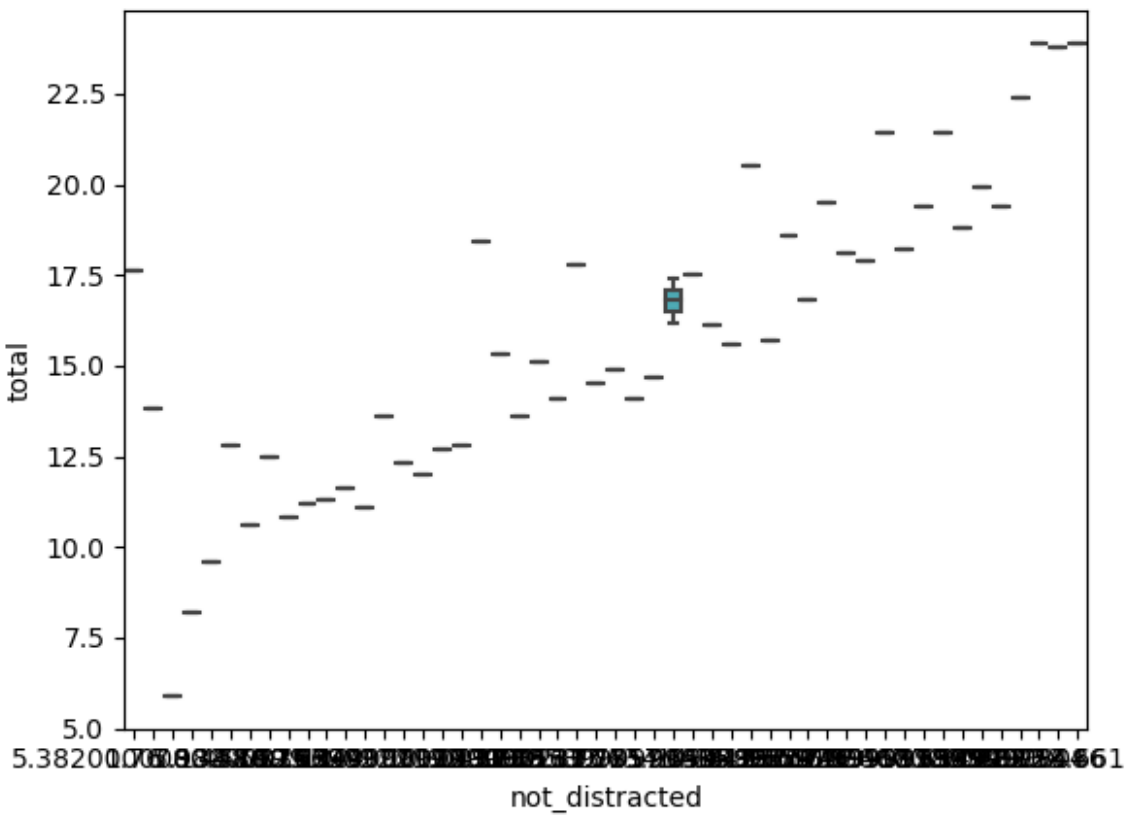

```
sns.boxplot(x="alcohol",y="no_previous",data=df)
```

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




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

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




```
corr  = df.corr()
corr
```

```
C:\Users\hp\AppData\Local\Temp\ipykernel_2372\3311646455.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.
  corr  = df.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(corr,annot=True)
```

```
<Axes: >
```