Importing seaborn library and loading dataset car_crashes

```
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
```

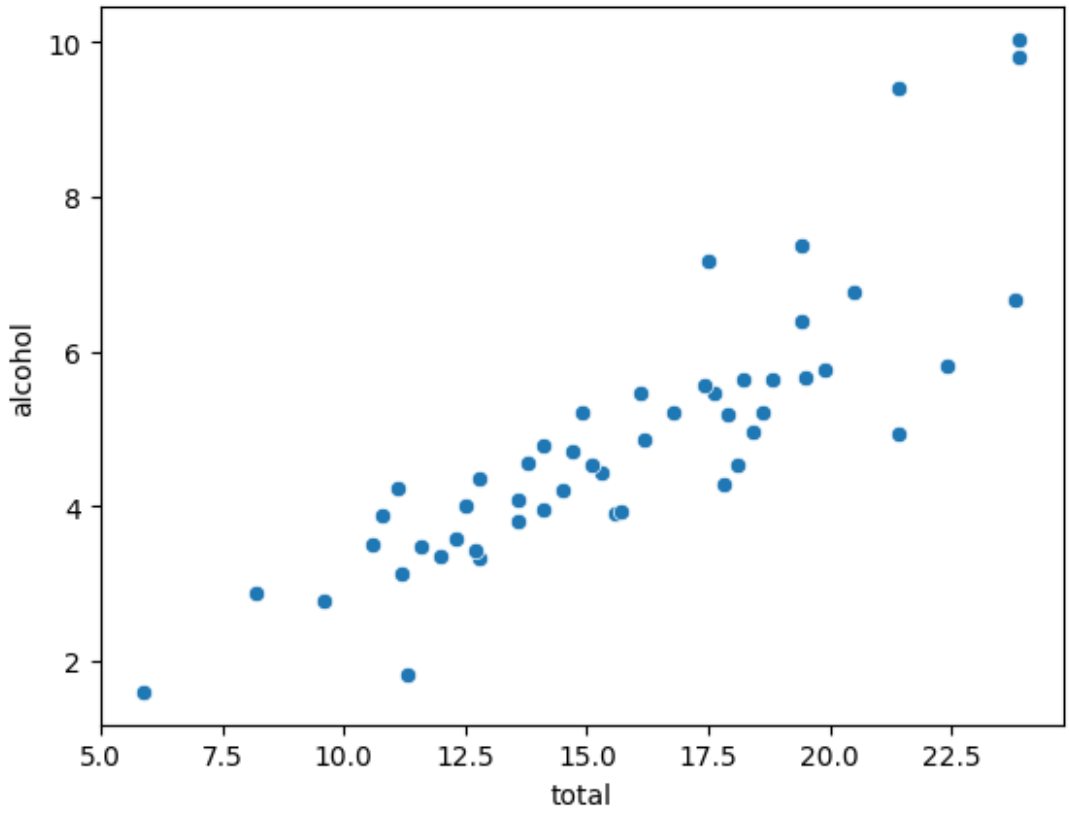
```
df.head(5)
```

```
   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
```

Scatterplot

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

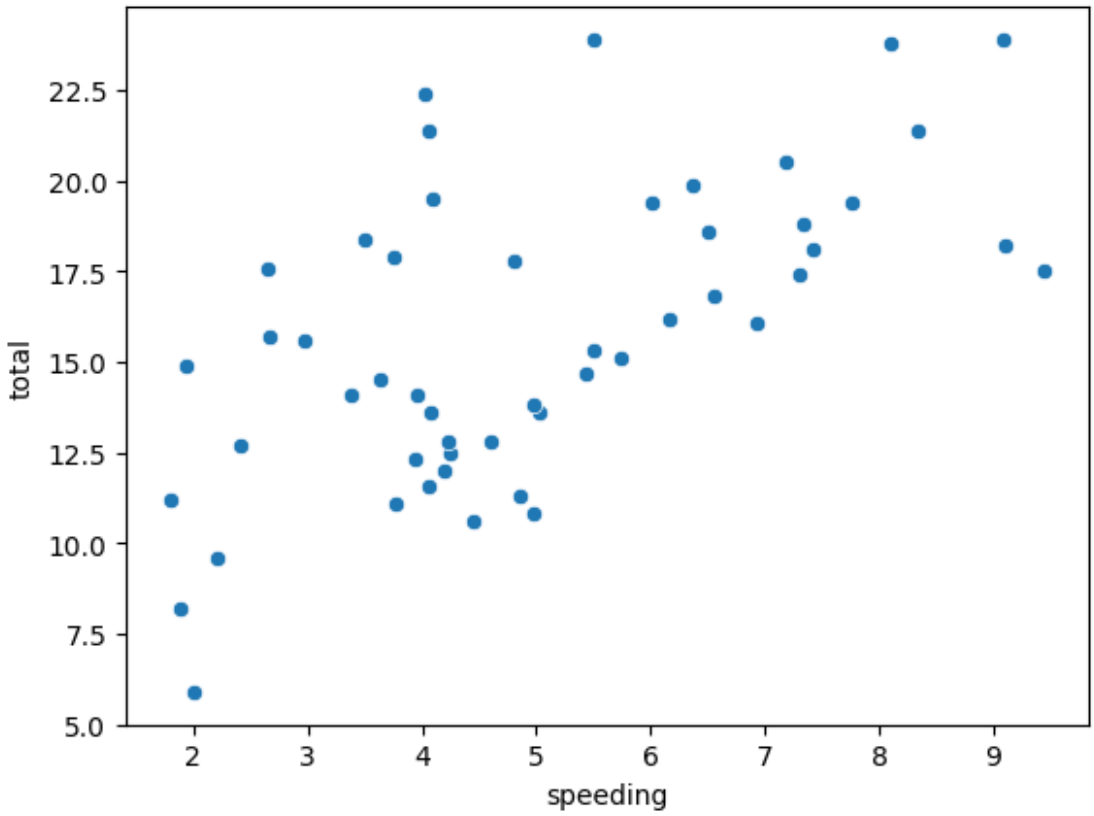
```
<Axes: xlabel='total', ylabel='alcohol'>
```



Inference- We can infer that the higher alcohol consumption leads to higher totals of deaths.

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

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

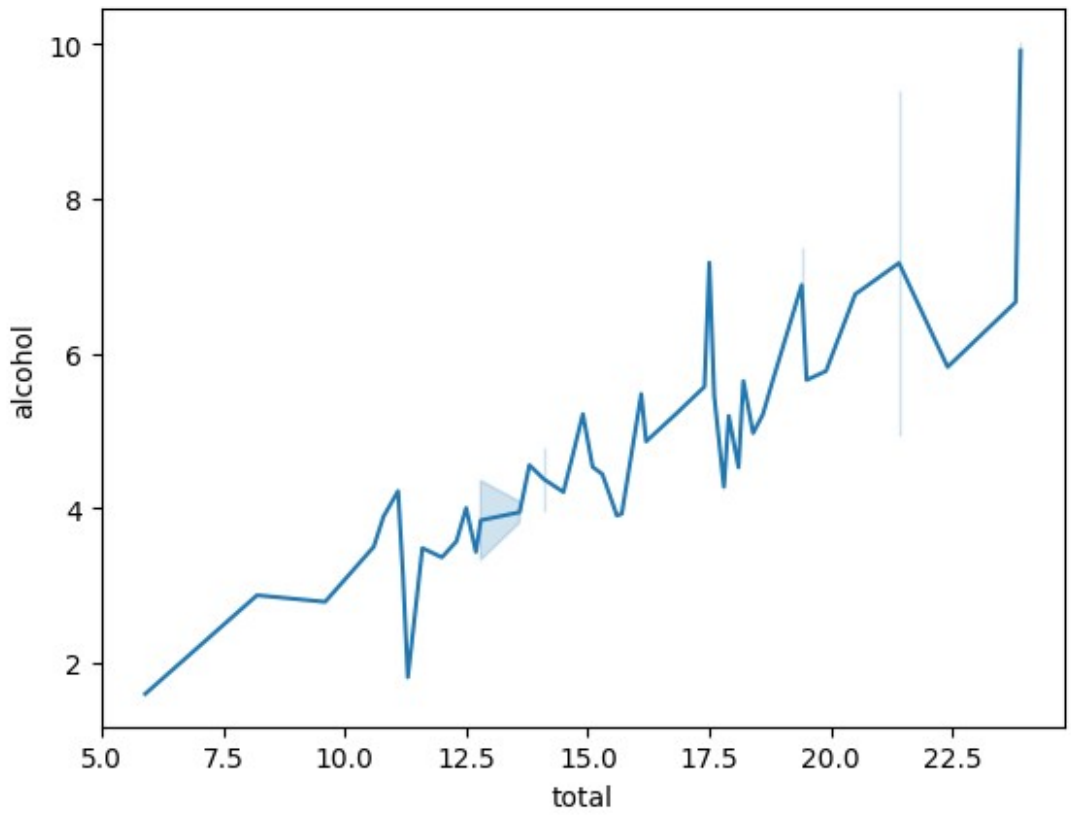


Inference- We can infer that the value of speeding for which there is a higher totality of deaths is between 5 and 6.

Lineplot

```
sns.lineplot(x ="total",y = "alcohol", data = df)
```

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

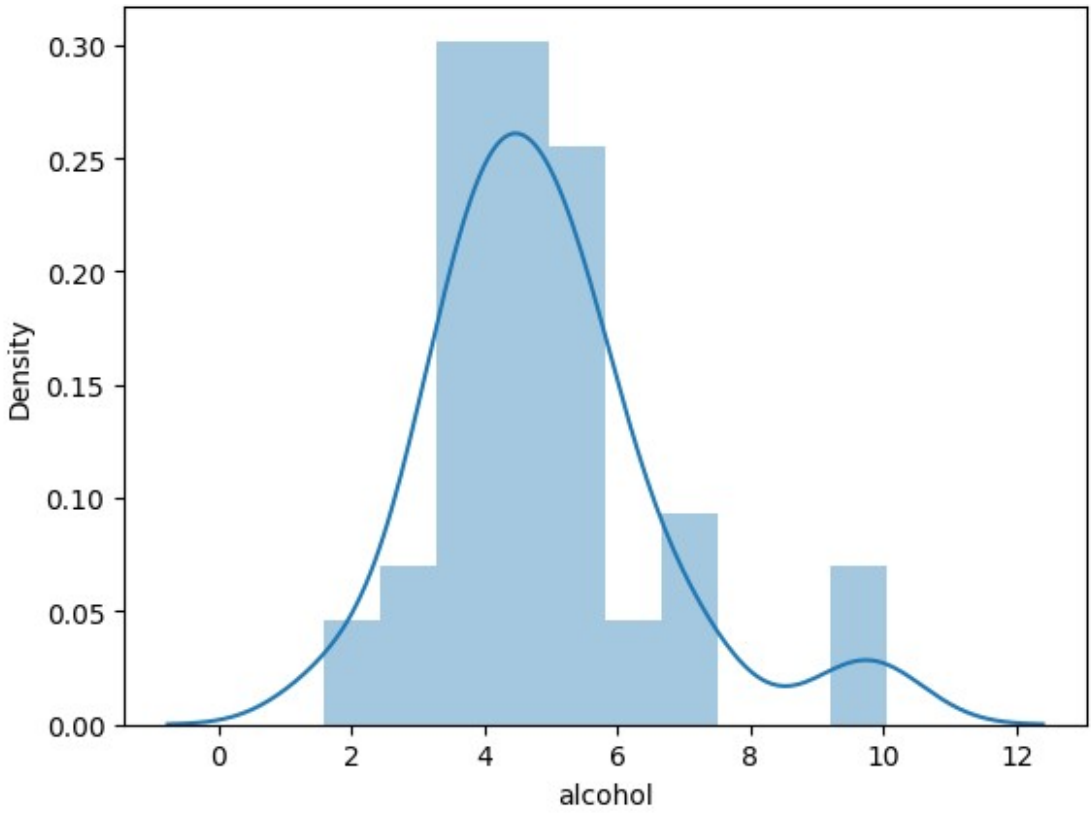


Inference- We can infer that the higher rates of alcohol consumption leads to higher rates of fatalities.

Distplot

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

```
<ipython-input-11-281d56044cde>: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'>
```

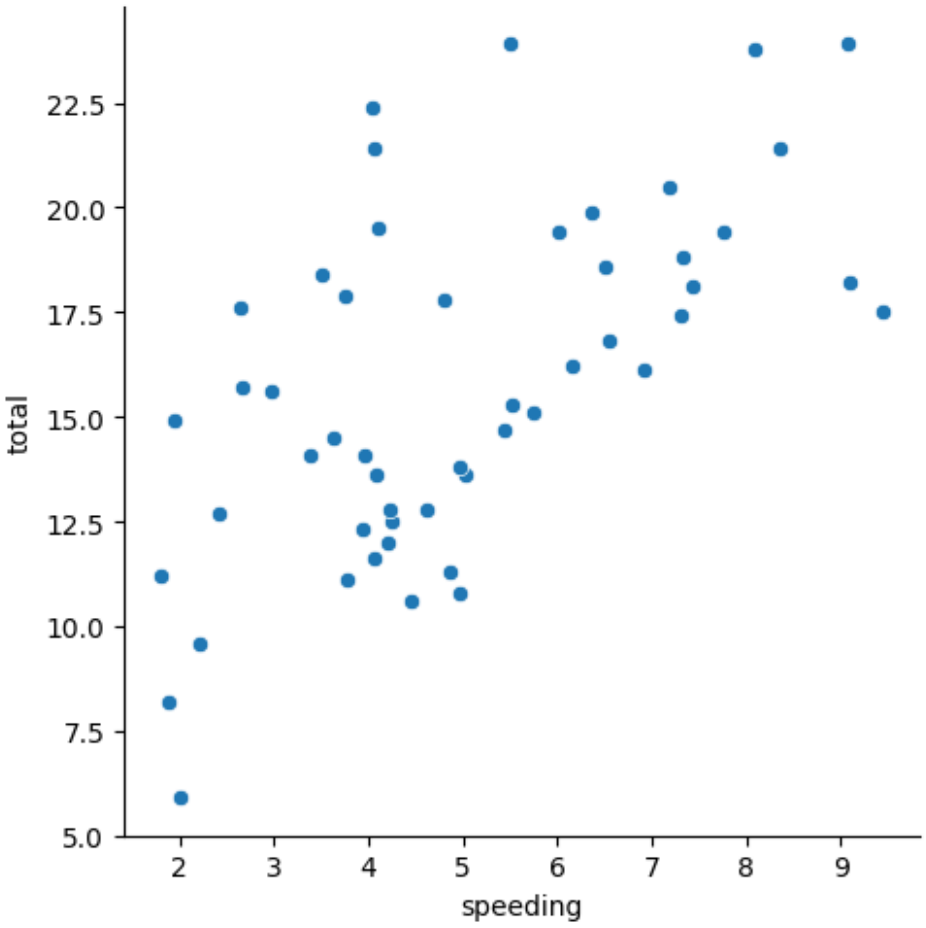


Inference- We can observe the most common level of alcohol consumption associated with car crashes to be at around 5. We can observe the range of values to be concentrated between 2 and 7 with a few instances of values 9 and 10. This suggests a concentrated range of alcohol values corresponding to car crashes.

Real plot

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

```
<seaborn.axisgrid.FacetGrid at 0x7e4b4fe589a0>
```

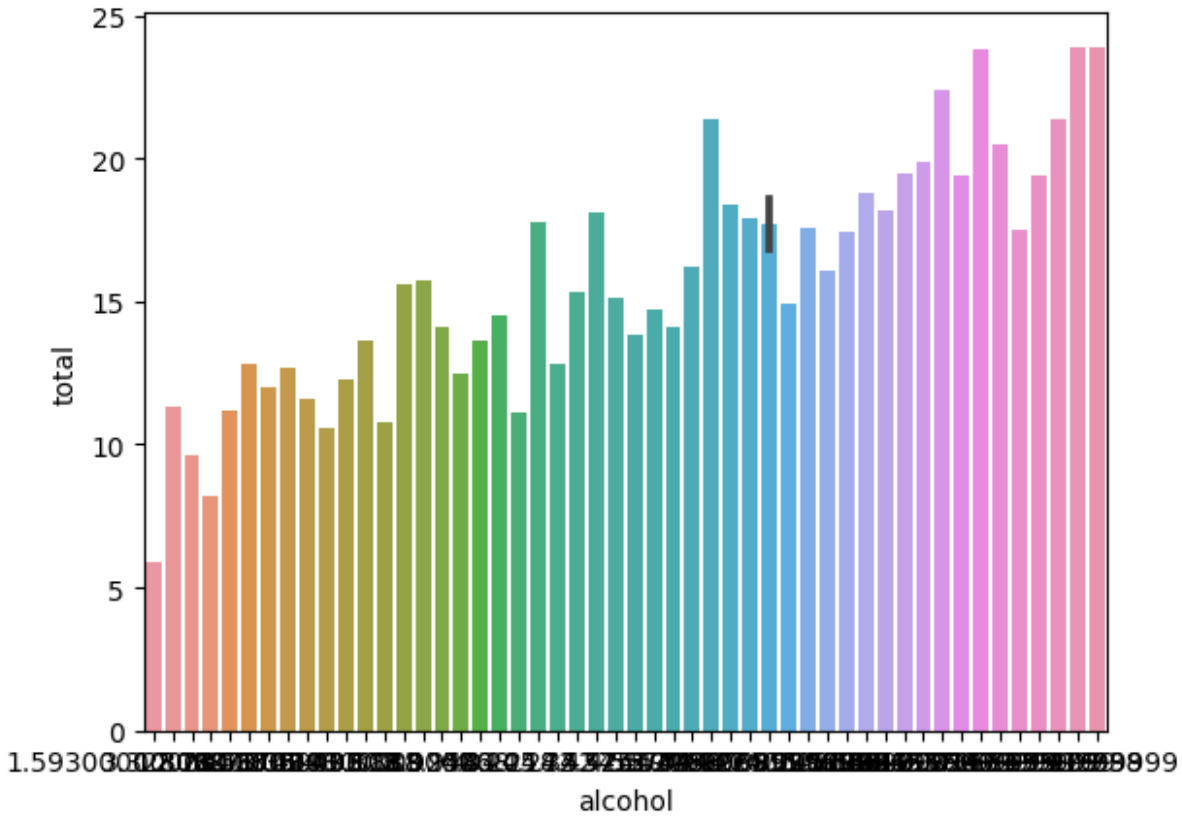


Inference- We can see that there is a positive relationship between the two variables, indicating that the increase in speeding leads to increase in fatalities.

Barplot

```
sns.barplot(x = "alcohol",y = "total",data = df)
```

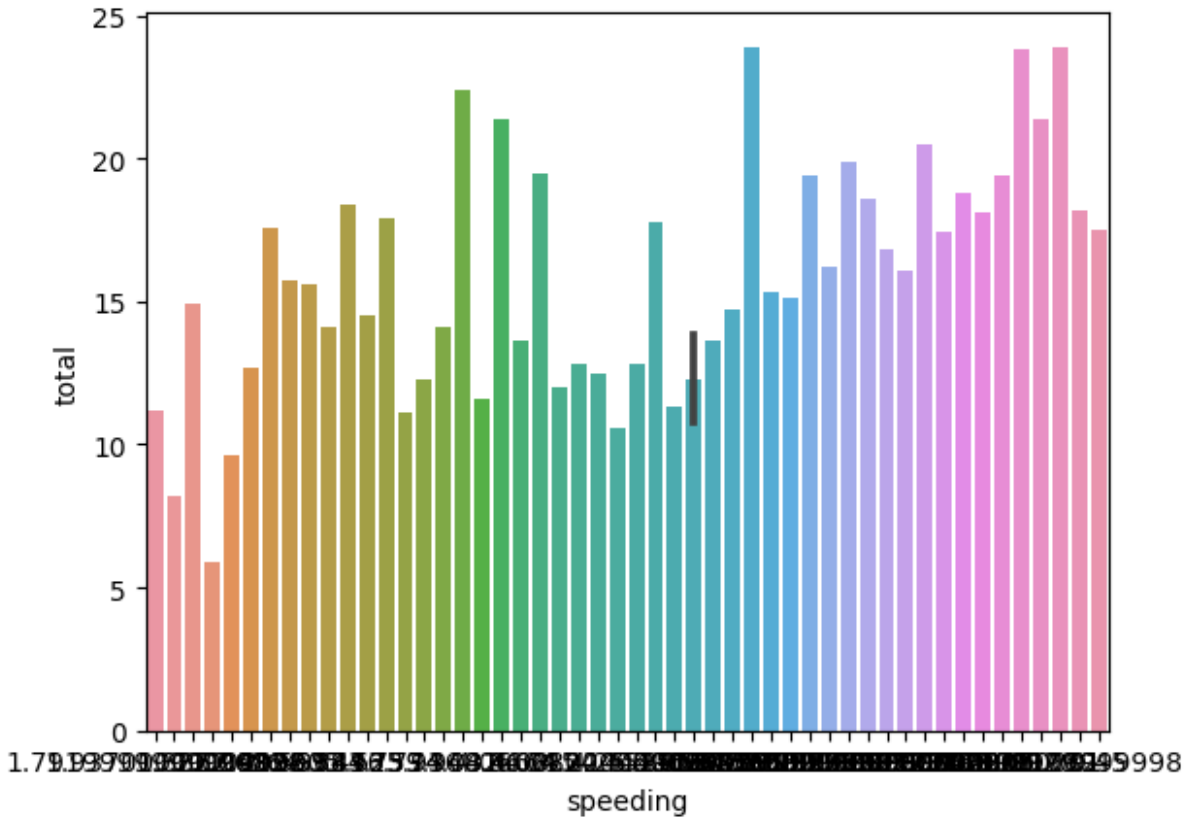
```
<Axes: xlabel='alcohol', ylabel='total'>
```



Inference- We can quite clearly see that an increase in alcohol consumption leads to higher rate of fatalities.

```
sns.barplot(x = "speeding", y = "total", data = df)
```

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

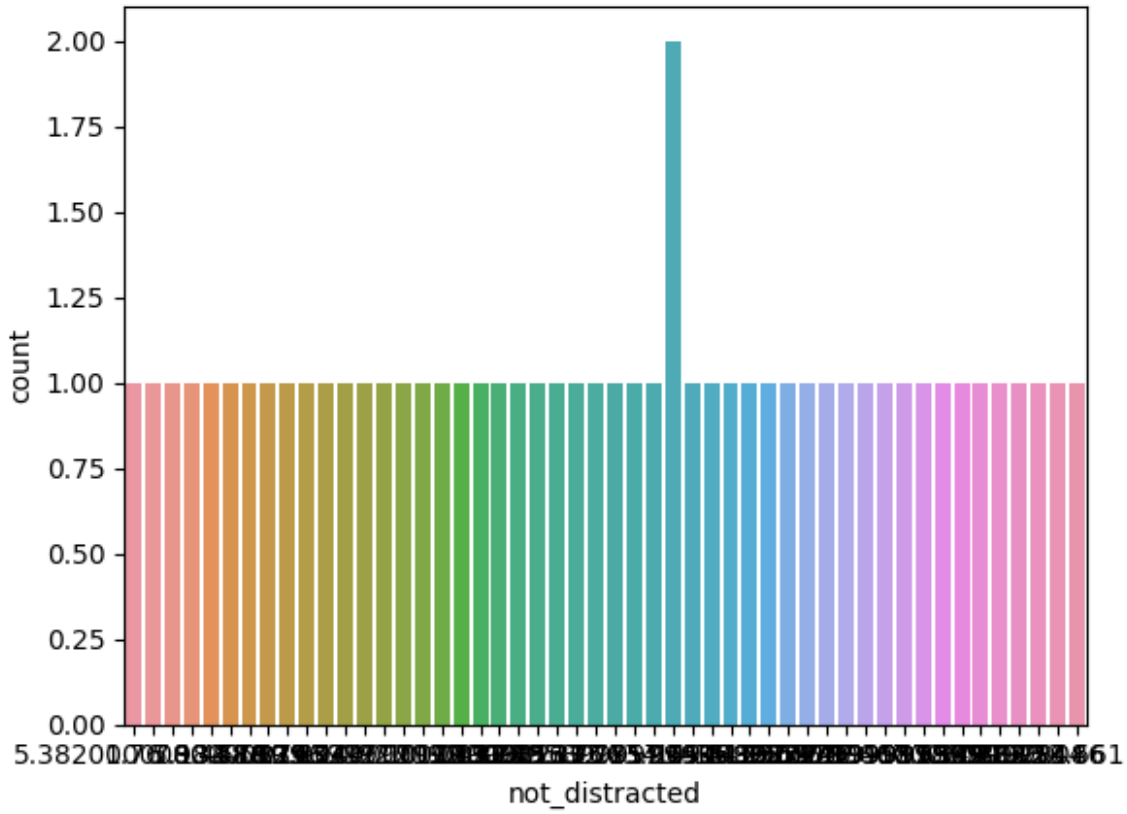


Inference- The highest fatality rate due to a certain value of speeding is around 23 or 24.

Countplot

```
sns.countplot(x = "not_distracted", data = df, )
```

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

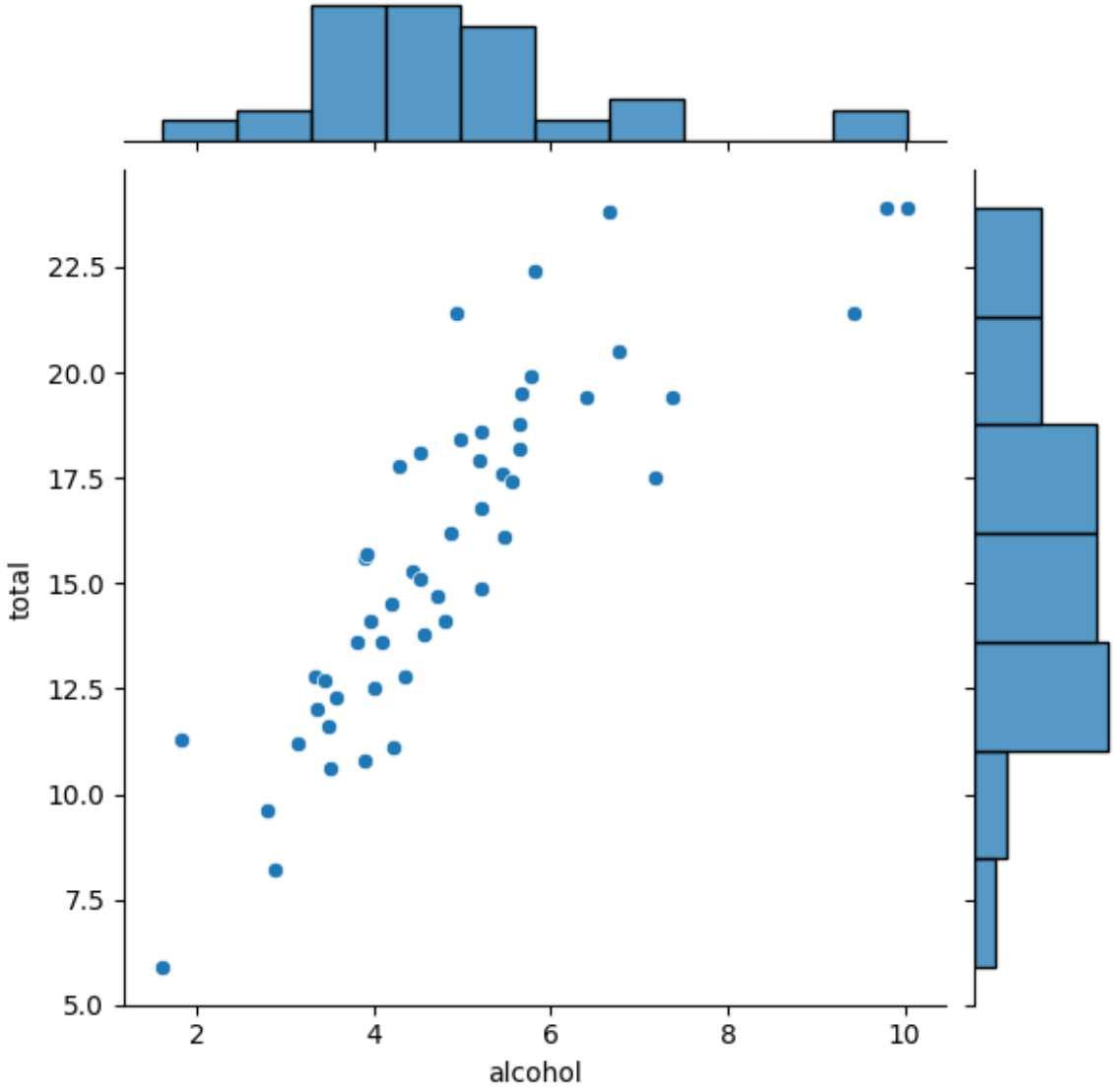


Inference= Only one value of "not_distracted" appears more than once.

Jointplot

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

```
<seaborn.axisgrid.JointGrid at 0x7e4b4d1b5720>
```

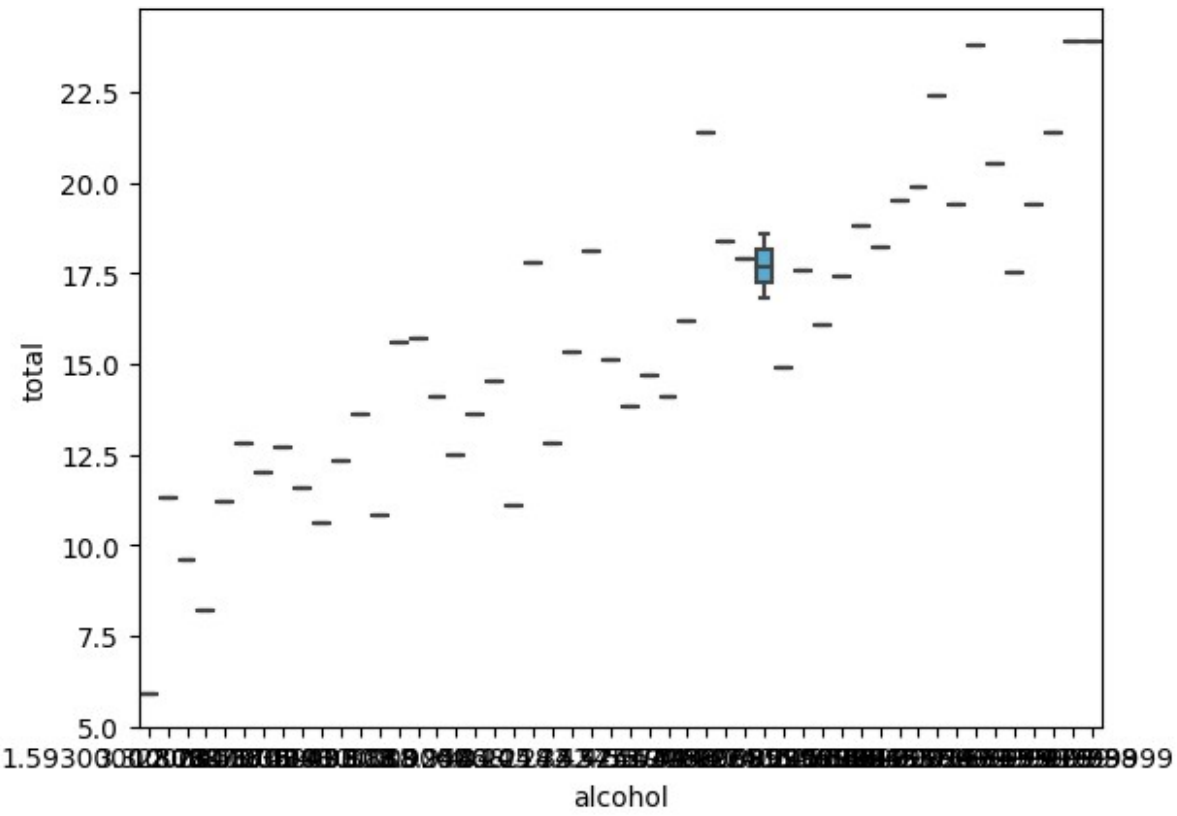


Inference- We can see how the increase of alcohol comsumption leads to higher totals of fatalities.

Boxplot

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

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



Inference- The median indicated here is around 17 fatalities. The range does not have great variability as it is quite a narrow box.

Heatmap

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

```
<ipython-input-28-4381f08f6434>: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()
```

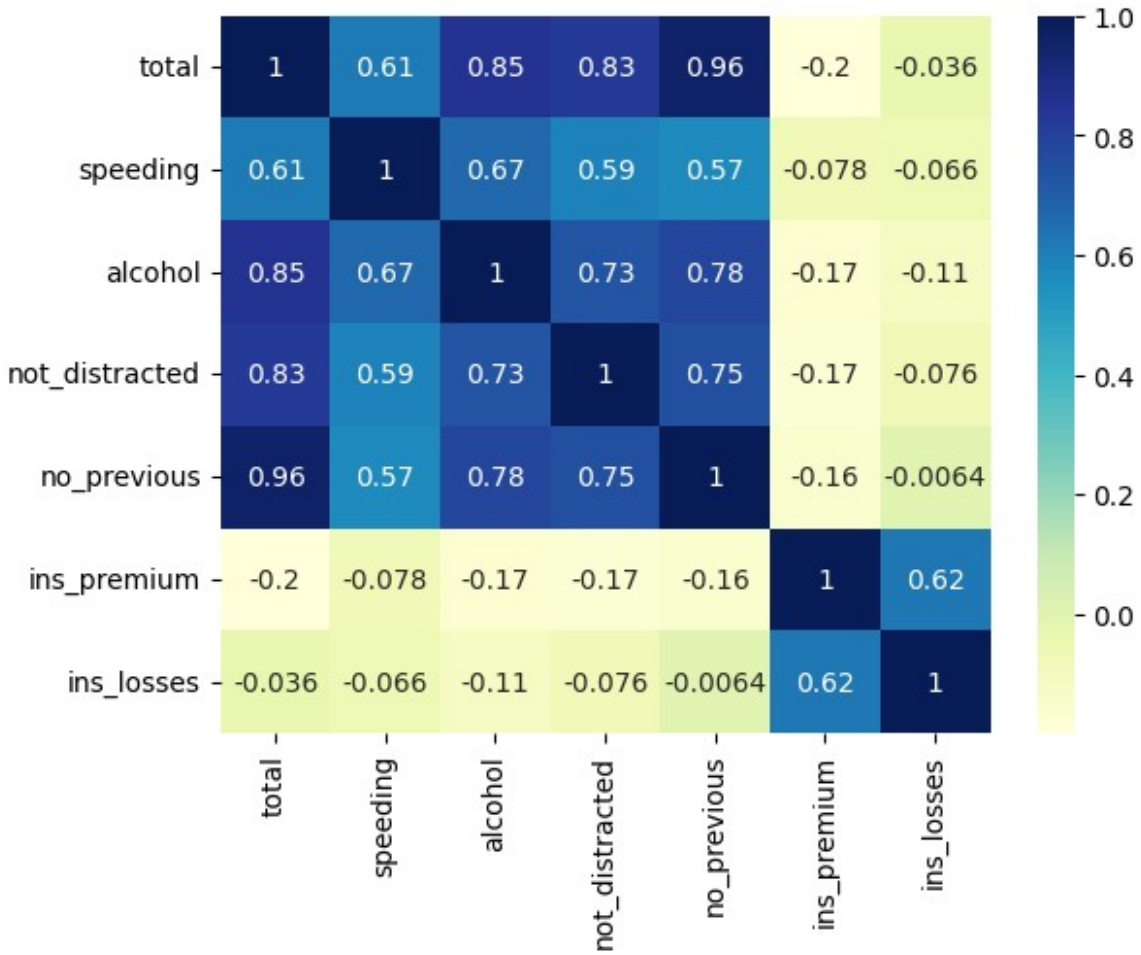
	total	speeding	alcohol	not_distracted	no_previous
total	1.000000	0.611548	0.852613	0.827560	0.956179
speeding	0.611548	1.000000	0.669719	0.588010	0.571976
alcohol	0.852613	0.669719	1.000000	0.732816	0.783520
not_distracted	0.827560	0.588010	0.732816	1.000000	0.747307
no_previous	0.956179	0.571976	0.783520	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,cmap="YlGnBu")
```

```
<Axes: >
```



Inference- We can observe the magnitude of correlation between two variables based on the color and value present in the cells. Darker colors indicate a higher correlation. Values above 0.5 indicate a higher correlation.