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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
```

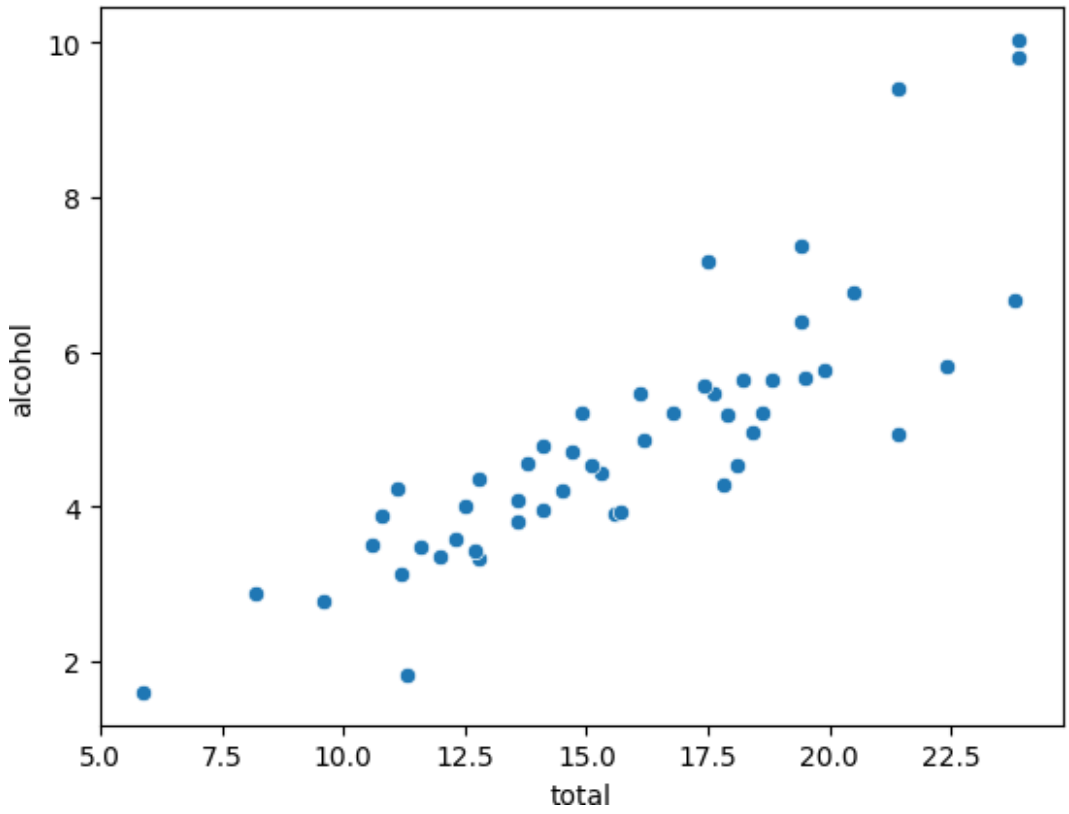
```
df.head(5)
```

```
   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)
```

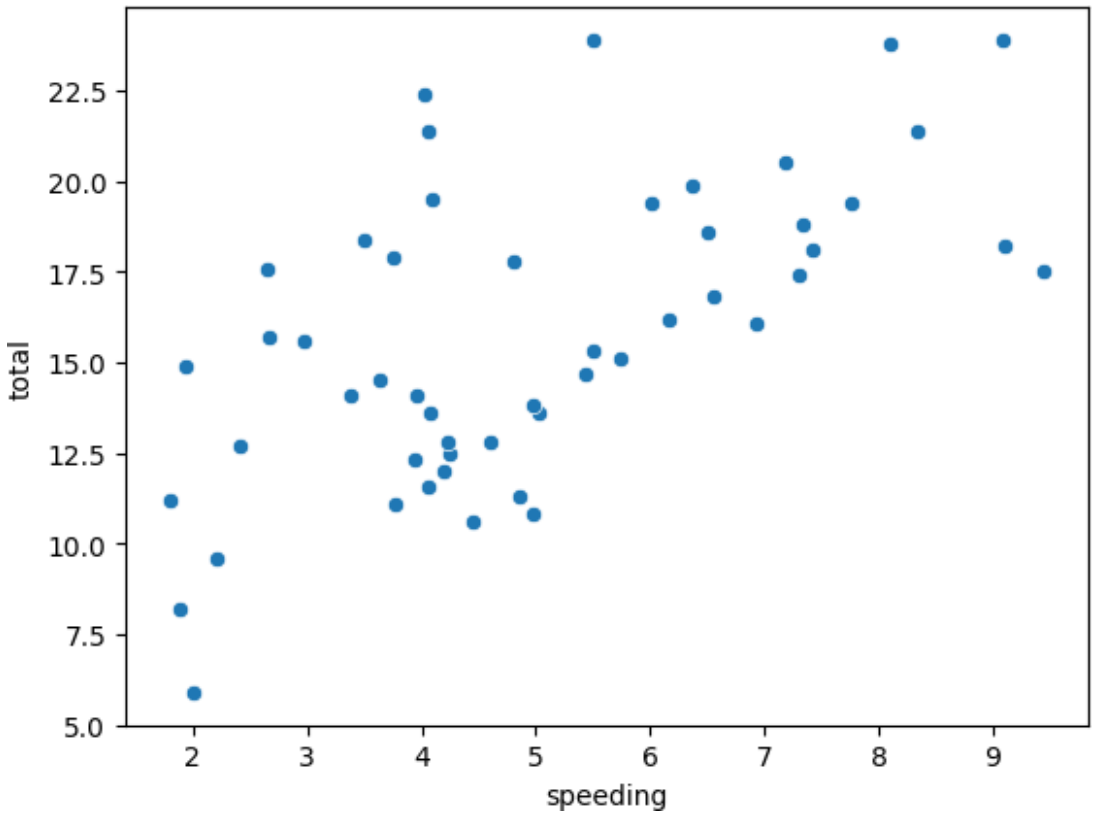
```
<Axes: xlabel='total', ylabel='alcohol'>
```



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'>
```

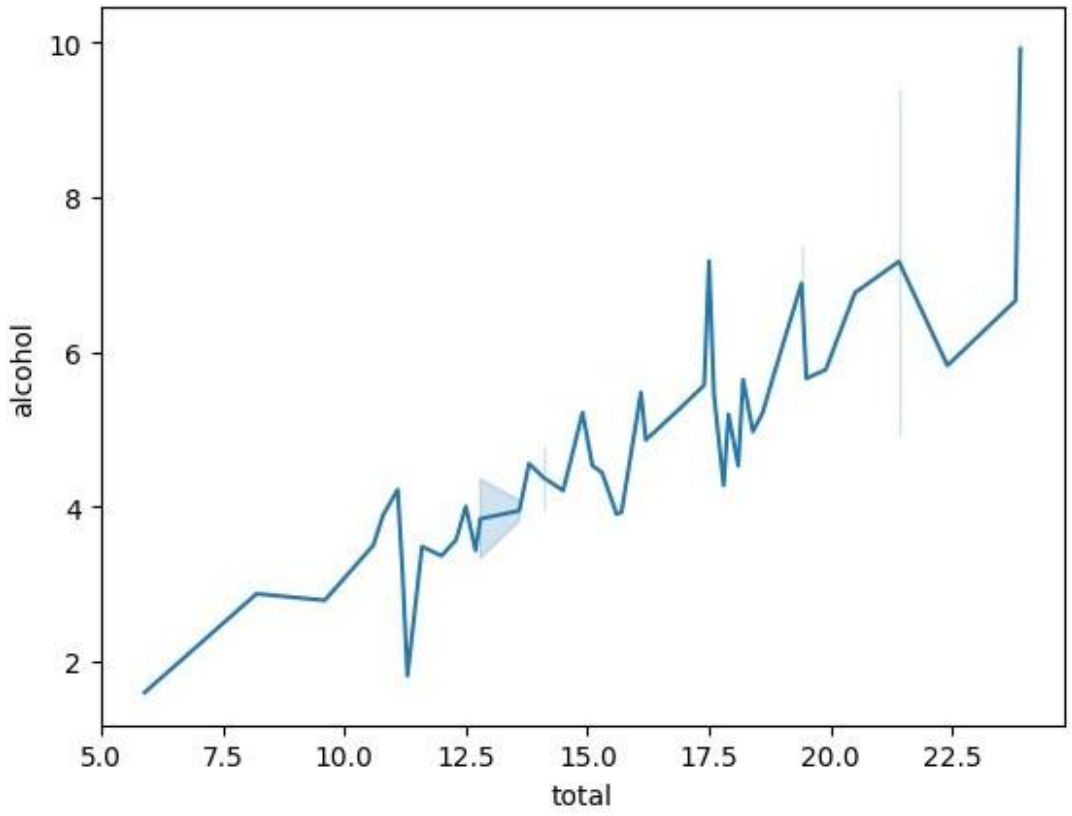


Inference- We can infer that the value of speeding for which there is a higher totality of deaths is between 5 and 6.

Lineplot

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

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

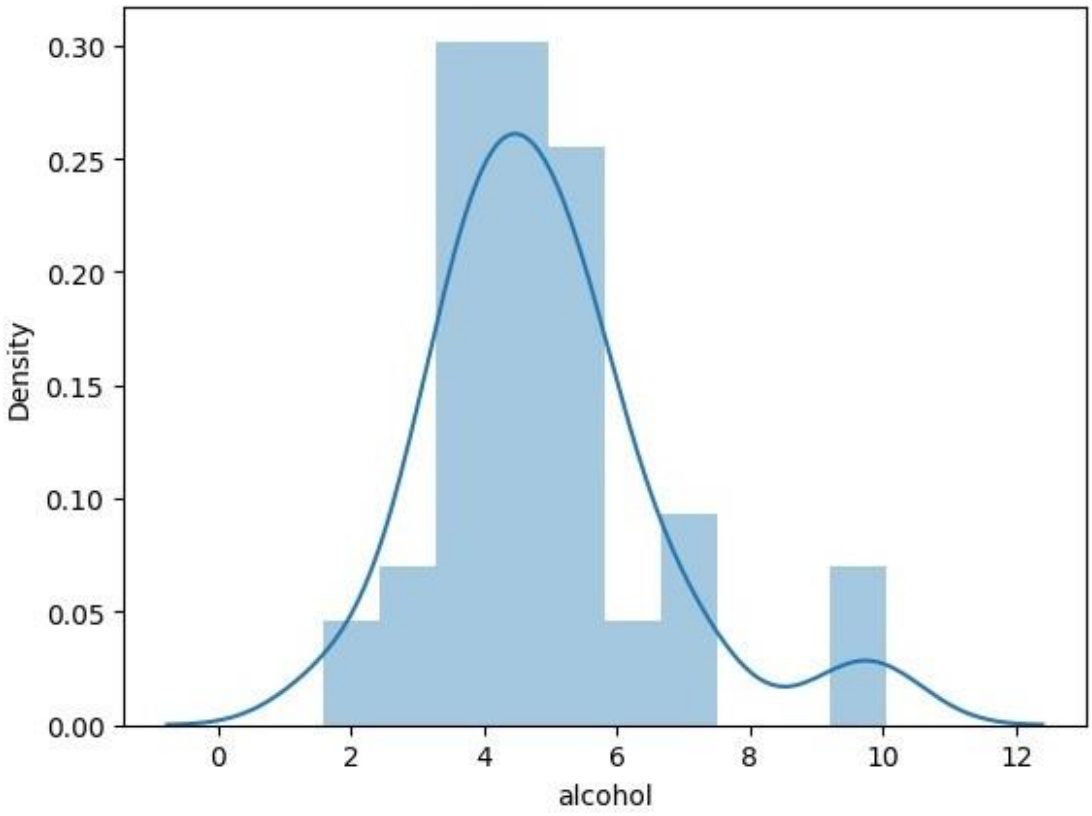


Inference- We can infer that the higher rates of alcohol consumption leads to higher rates of fatalities.

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'>
```

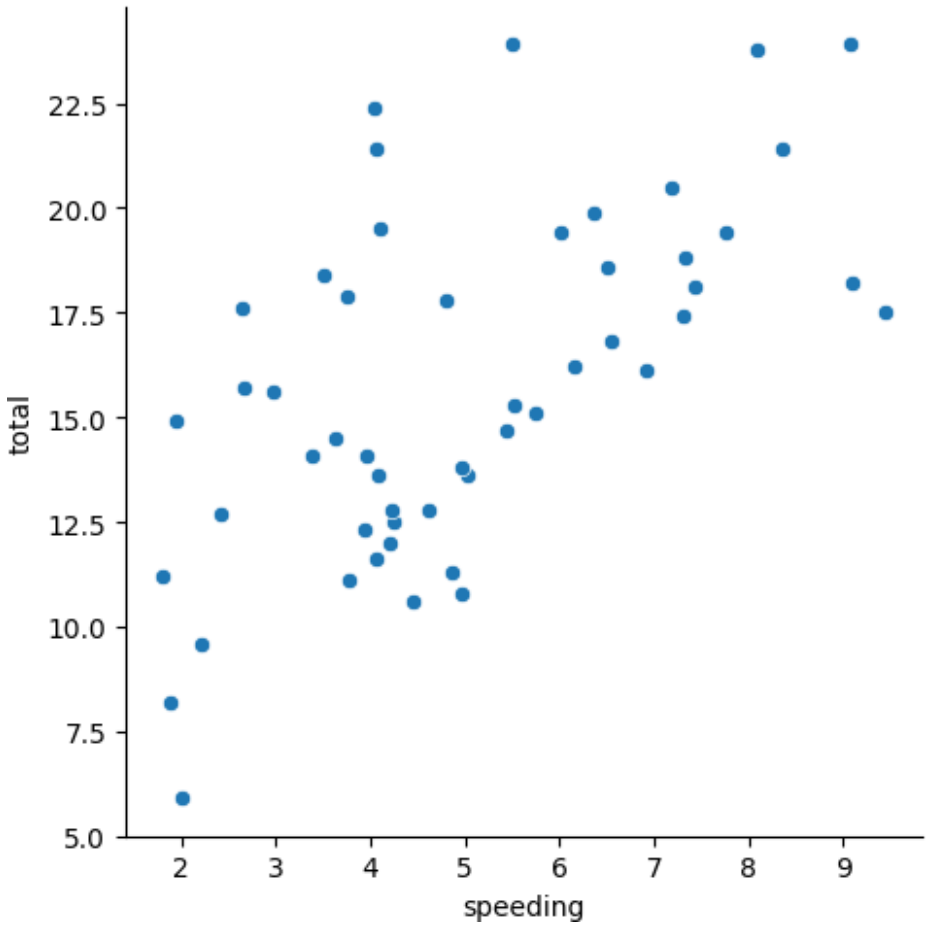


Inference- We can observe the most common level of alcohol consumption associated with car crashes to be at around 5. We can observe the range of values to be concentrated between 2 and 7 with a few instances of values 9 and 10. This suggests a concentrated range of alcohol values corresponding to car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

Real plot

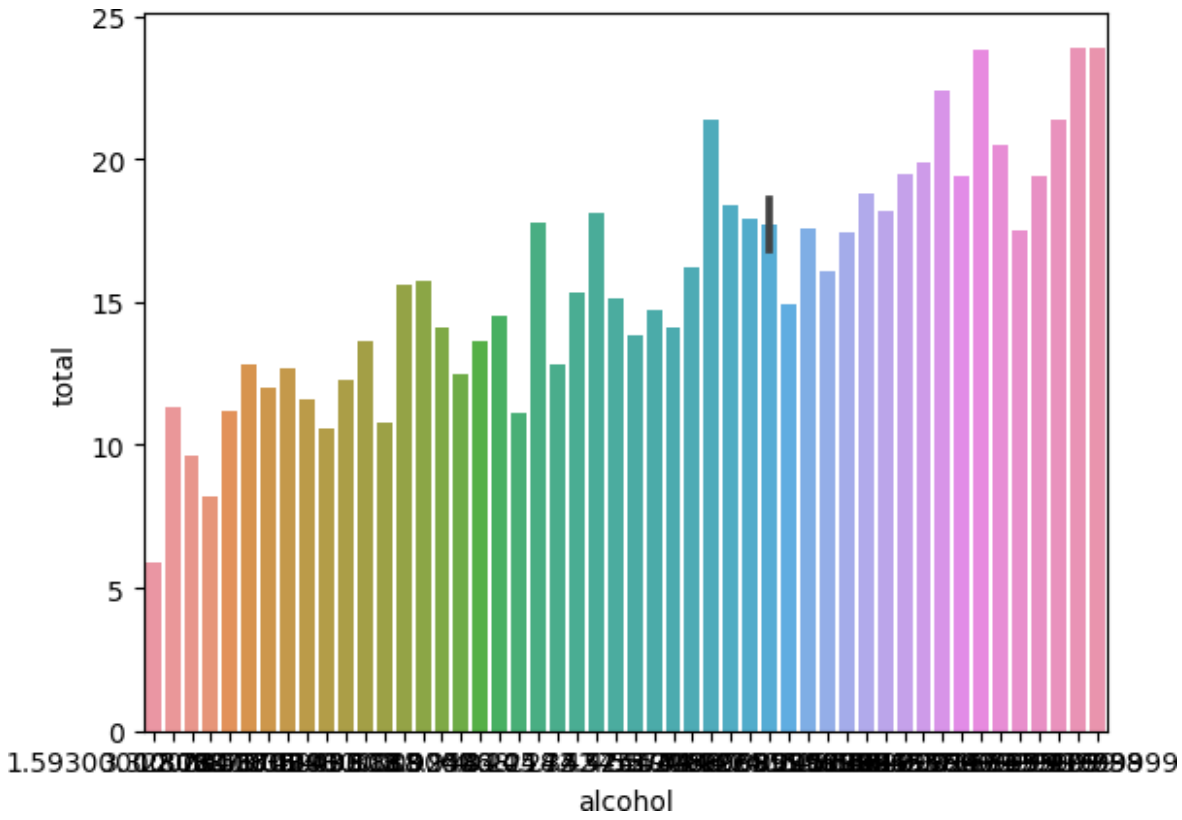
```
sns.relplot(x  = "speeding", y = "total", data = df)
```

```
<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.

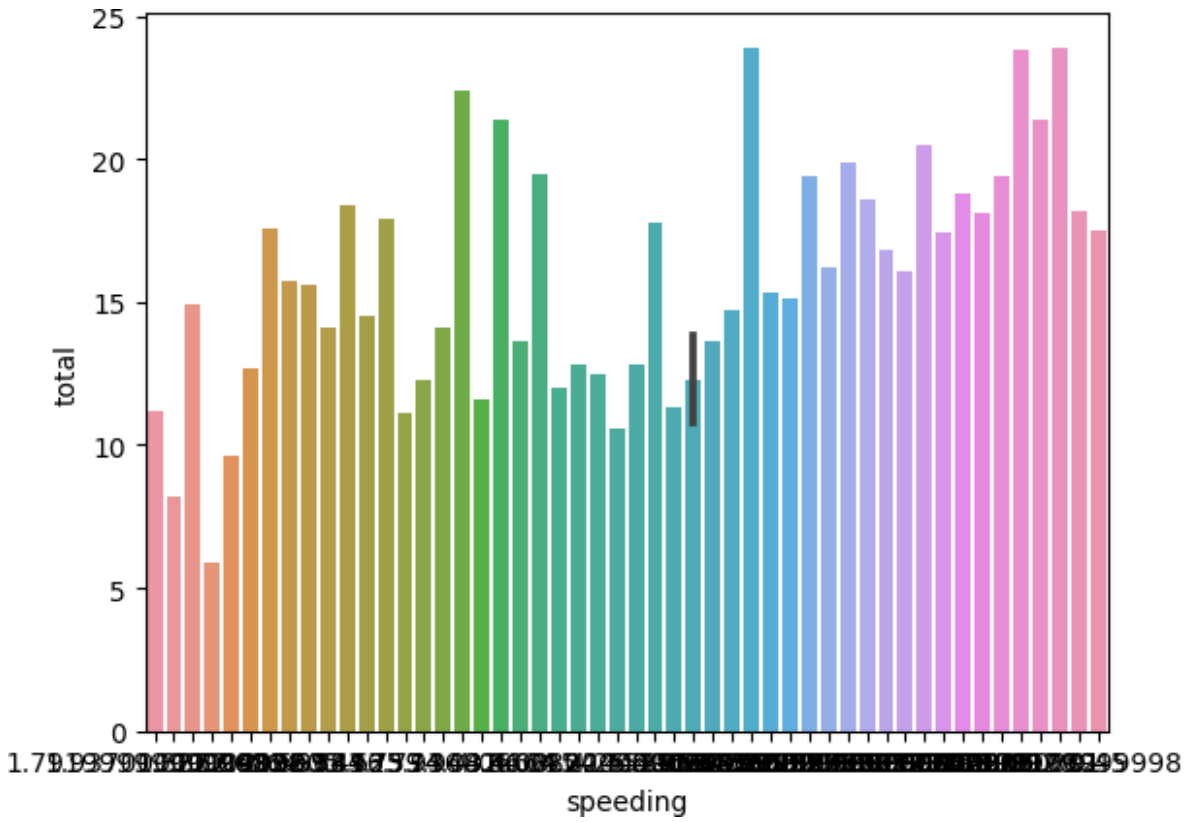
```
Barplot

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'>
```

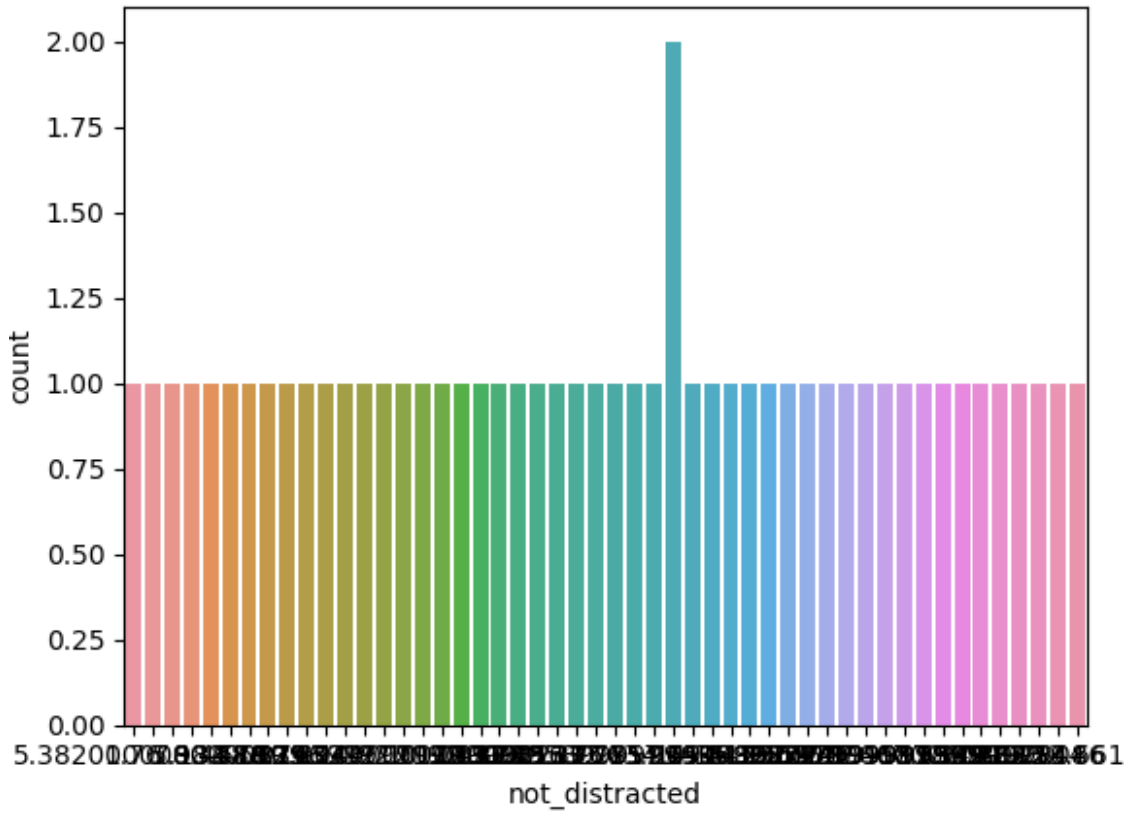


Inference- The highest fatality rate due to a certain value of speeding is around 23 or 24.

Countplot

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

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

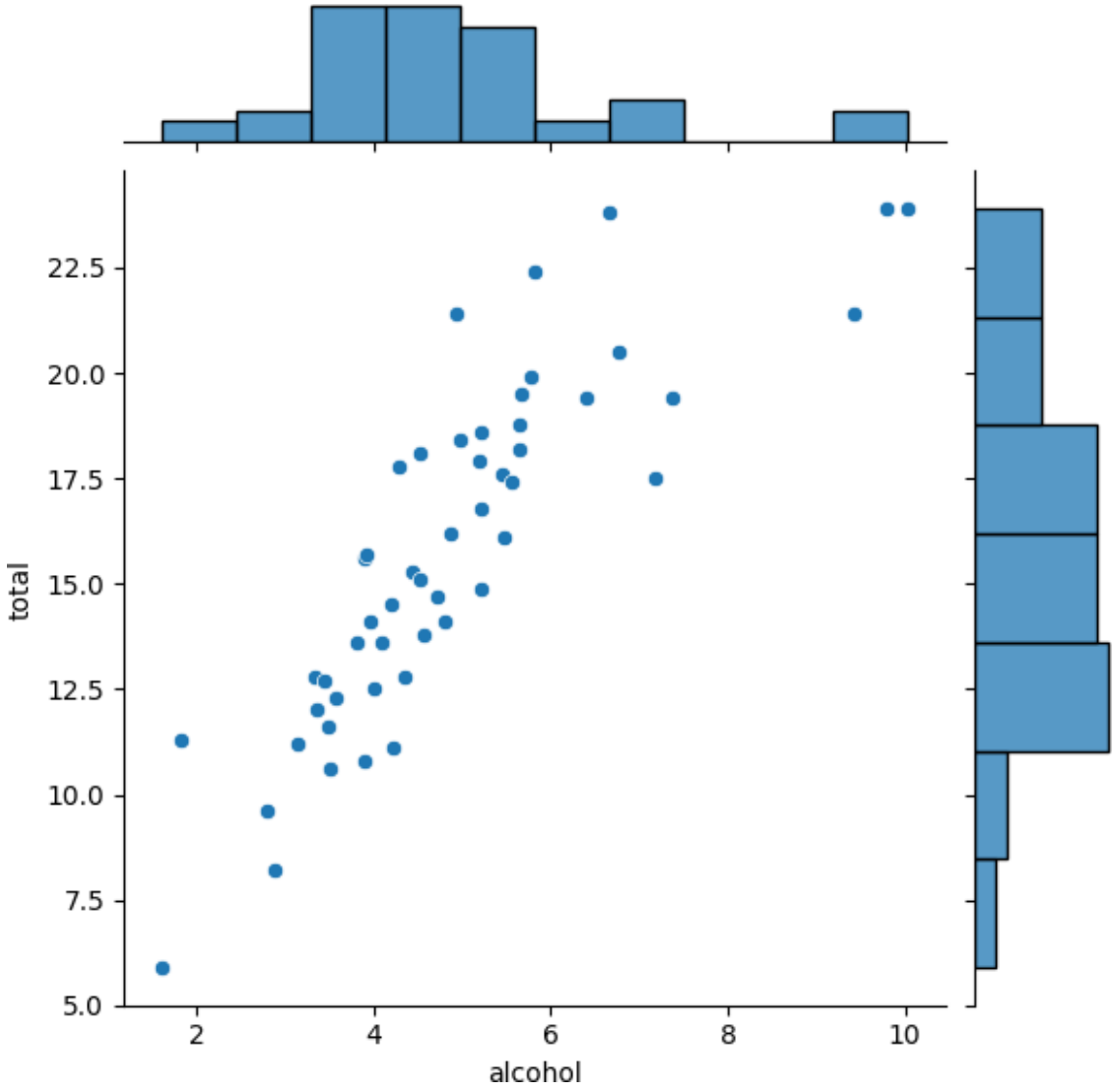


Inference= Only one value of "not_distracted" appears more than once.

Jointplot

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

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

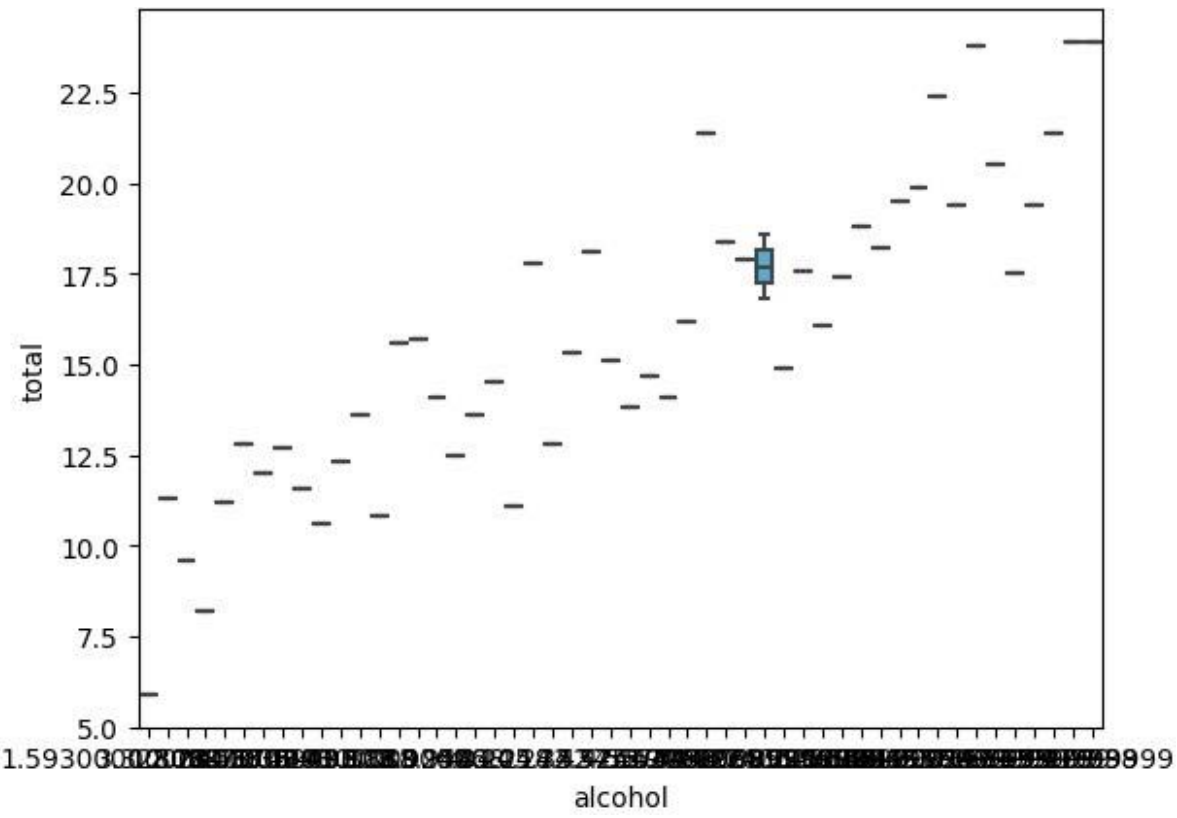


Inference- We can see how the increase of alcohol comsumption leads to higher totals of fatalities.

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()
```

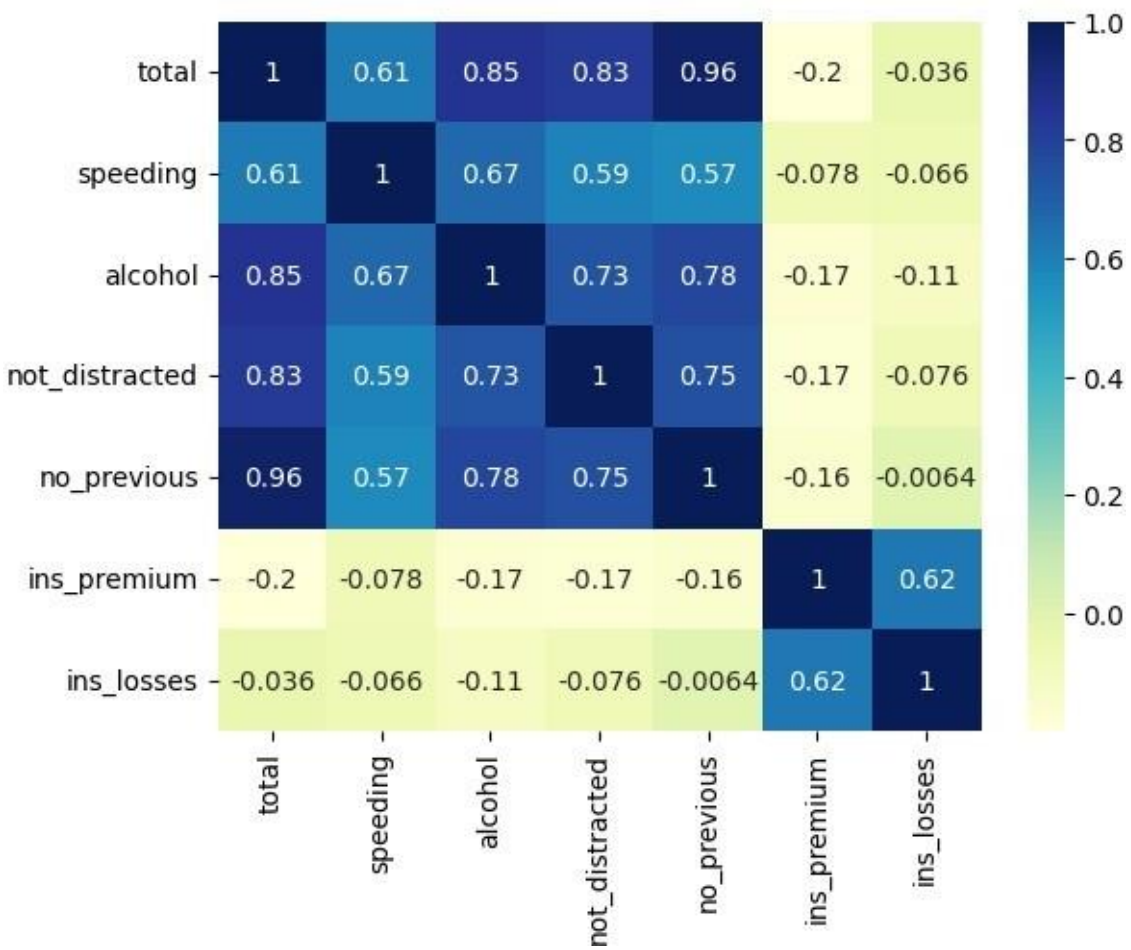
	total	speeding	alcohol	not_distracted	no_previous
total	1.000000	0.611548	0.852613	0.827560	0.956179
speeding	0.611548	1.000000	0.669719	0.588010	0.571976
alcohol	0.852613	0.669719	1.000000	0.732816	0.783520
not_distracted	0.827560	0.588010	0.732816	1.000000	0.747307
no_previous	0.956179	0.571976	0.783520	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.