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Assignment-02(08-09-23).ipynb

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

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

['anagrams', 'anscombe', 'attention', 'brain_networks', 'car_crashes', 'diam car crashes', 'diamonds', 'dots' , 'dowjones', 'exercise' , 'flights' , 'fmri' , '

```
df = sns.load dataset'car crashes,
print(df)
```

total speeding alcohol not distracted no_previous ins_premium \

e 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. gee 14.820 14.508913.15

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 15.72.669 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 20.0901281.55

19 15.1 5.738 4.530 13.137 12 .684 661.88

20 12.5 4.250 4. eee 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

2417.6 2 . 640 5.456 1.760 17.6ee 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 .190816.21

27 14.9 1.937 5.215 13.857 13 .410 732.28

28 14.75.439 4.704 13.965 14.553 1029.87

29 11.6 4.060 3. 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

3712.8 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 15.99015 . 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
	145 . 08	A
1	133.93	AK
2	110.35	AZ
3	142.39	AR

sns. version

i e. 12.2 i

df. info()

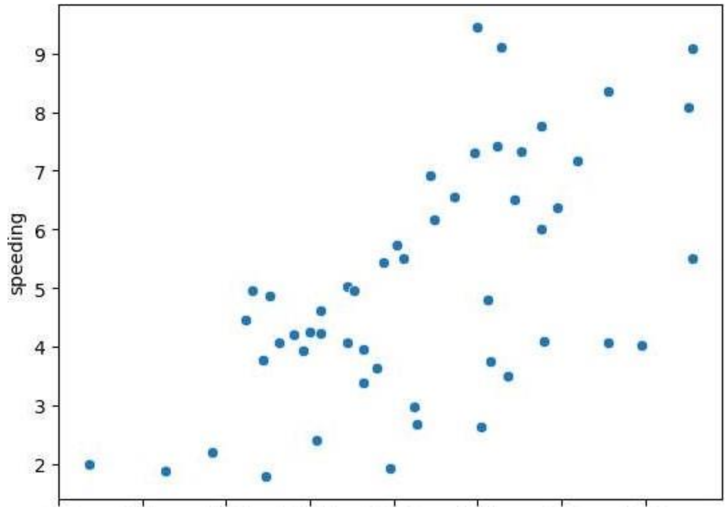
(class 'pandas. core. frame. DataFrame ' > Rangelndex: 51 entries, 0 to 50 Data columns (total 8 columns):

#	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_prevlous	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(l)
memory usage: 3.3+ KB

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

(Axes: xlabel='total', ylabel=' speeding' >

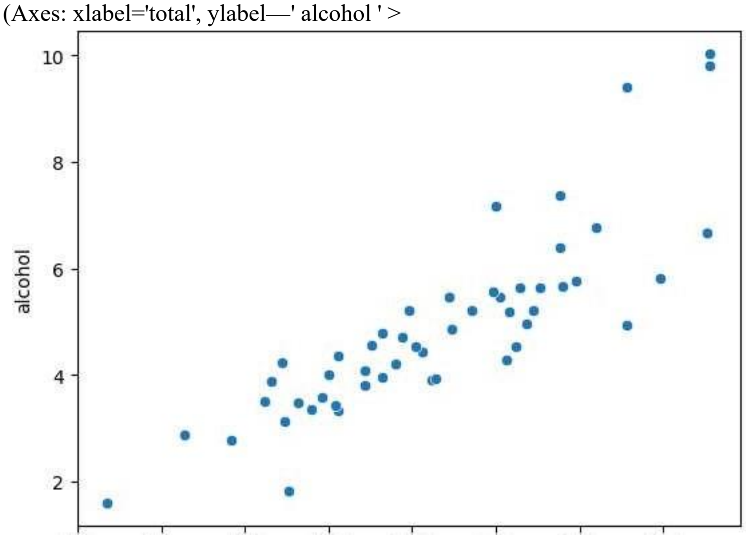


5.0 7.5 10.0 12.5
15.0 17.5 20.0
22.5 total

Inference: Here we can clearly observe that increase in speed has caused many car crashes. Which shows the direct proportionality in between total and speeding of car crashes.

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

(Axes: xlabel='total', ylabel—' alcohol ' >

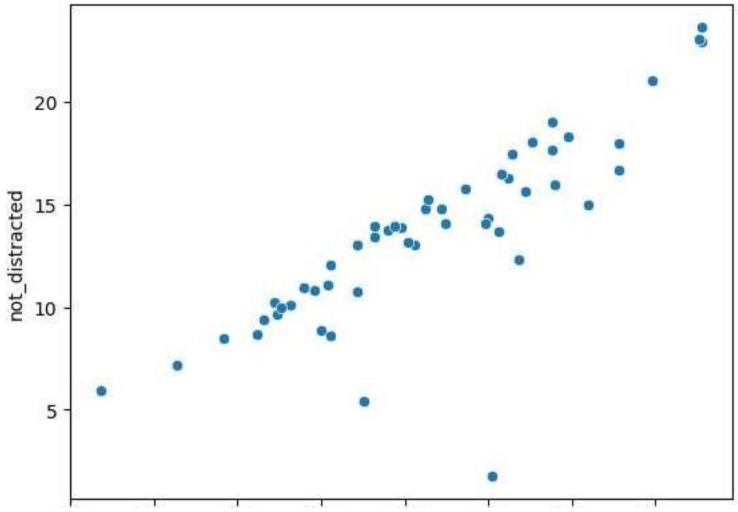


5.0 7.5 10.0 12.5
15.0 17.5 20.0
22.5 total

Inference: In the above graph ,it is obvious that excessive alcohol consumption has contributed to numerous auto accidents. which demonstrates the direct correlation between the overall number Of crashes and alcohol use.


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

(Axes: xlabel= 'total' , ylabel=' not_distracted ' >

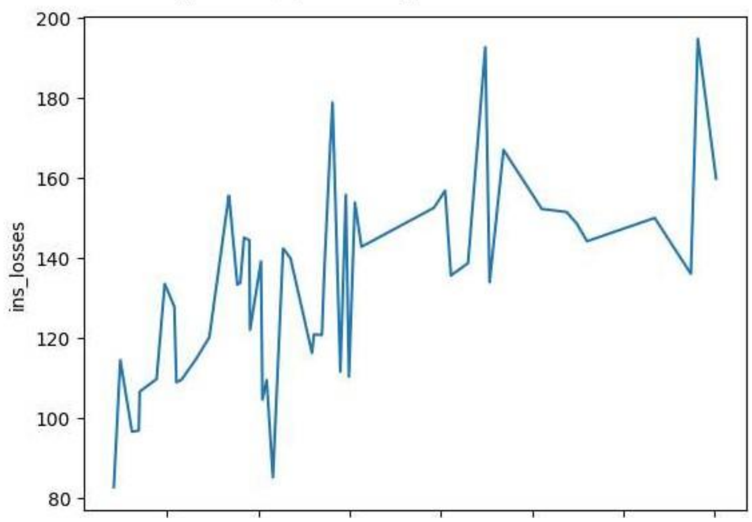


Inference:Here we can clearly observe that not_distracted has caused many car crashes. Which shows the direct proportionality in between total and not_distracted of car crashes.

```
ineplot(x="ins_premium",y="ins_losses", data=df)
```

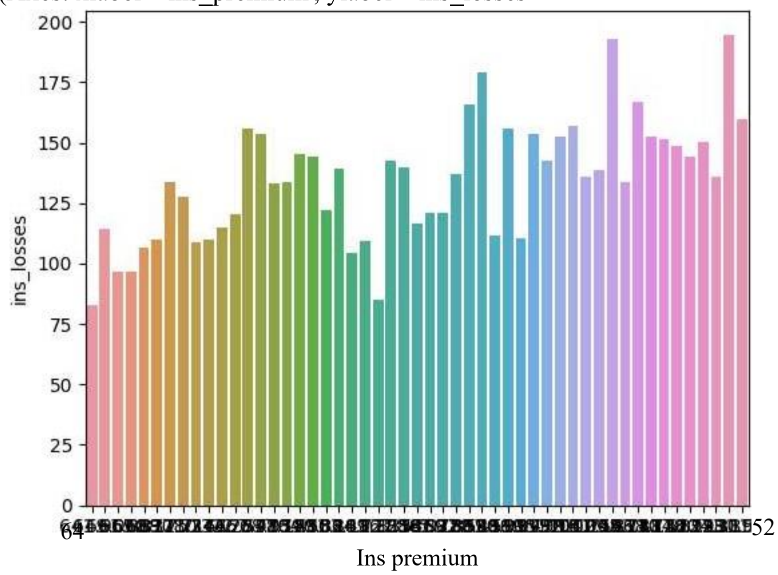
```
<Axes: xlabel='ins_premium', ylabel='ins_losses'>
```

sns.



sns. barplot(data=df x: " ins_premi um" "ins_ losses ")

(Axes: xlabel=' ins_premium', ylabel=' ins_losses ' >



Inference:There is an irregular plotting of lineplot of ins_premium and ins_losses. which defines that insurance losses is directly proportional to insurance premium. where increse in insurance premium also tends to increase in insurance loss.

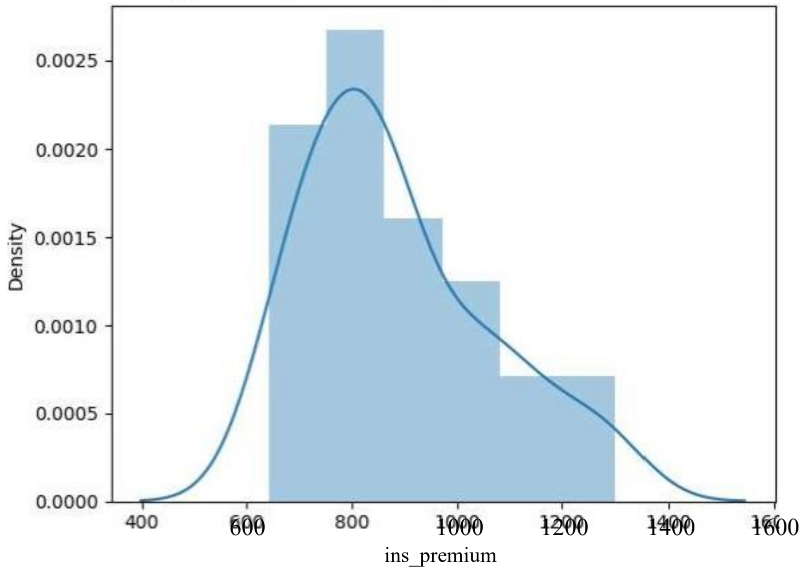
```
sns.distplot(df[ ' ins_premium' l)
```

<ipython- input-4-2616b6ce983b> : 1: UserWarning:

.distplot• is a deprecated function and will be removed in seaborn vø.14.e.
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
h.t.lu•LLgi.a.Gg

```
sns.distplot(df['ins_premium'])
```

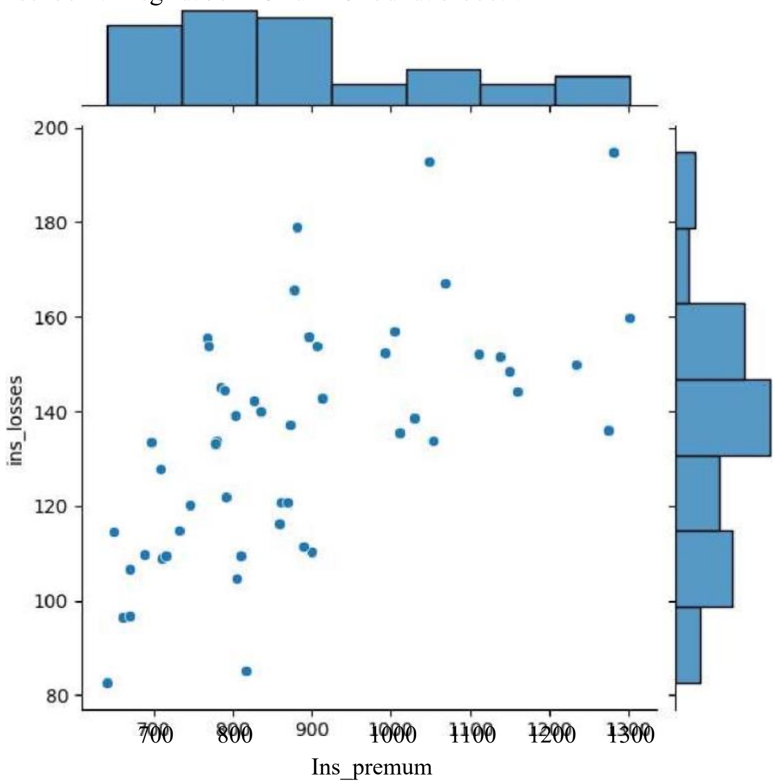
(Axes: xlabel='ins_premium', ylabel='Density'>



Inference: The above graph is about the density Of the insurance premium where there is a huge increase in the density Of insurance premium at a point Of 800.

```
sns . jointplot (data=df , x= " ins_premium" , " ins_losses " )
```

< seaborn.axisgrid. JointGrid at Ox7d1d5bfbbe50>



Inference: The above graph is about jointplot of ins_premium and ins_losses where the plotting of graph is randomly distributed through out the graph. We can observe the density of ins_premium and ins_losses where they show in great increase and decrease.

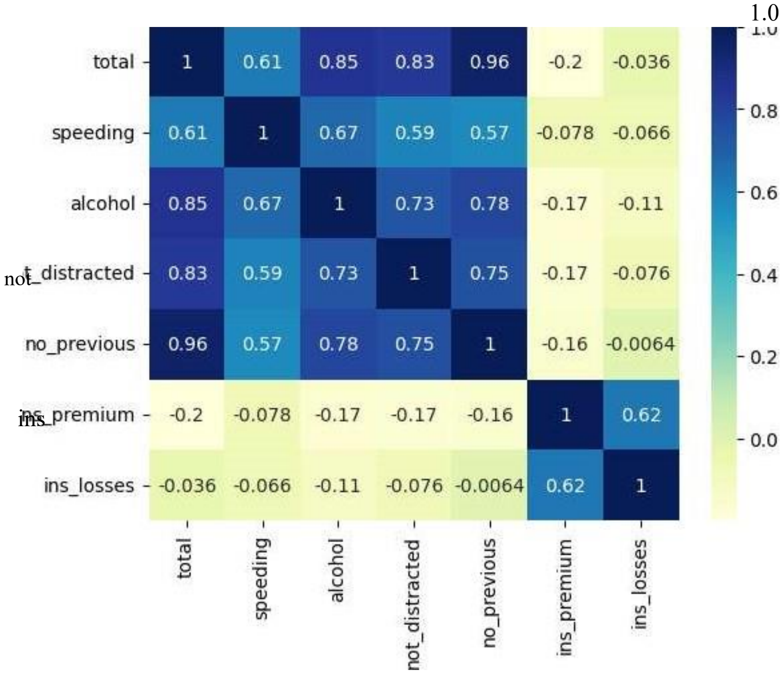
```
corr=df. corr()
corr
```

<ipython-input-22-7d5195e2bf4d> : 1: FutureWarning: The default value of numeric_only in DataFrame. corr is deprecated. In a future versior corr=df. corr()

	total	speeding	alcohol	not_distracted	no_previous	ins_premium	ins_losses
total	1.000000	0.611548	0.852613	0.827560	0.956179	-o. 199702	- 0.036011
speeding	0.611548	1 .oooooo	0.669719	0.588010	0.571976	-0.077675	-0.065928
alcohol	0.852613	0.669719	1 .oooooo	0.732816	o. 783520	-0.170612	-o. 112547
not distracted	0.827560	0.588010	0.732816	1.000000	0.747307	-o. 174856	-0.075970
no_previous	0.956179	0.571976	0.783520	0.747307	1.000000	-o. 156895	-0.006359
ins_premium	-0.199702	-0.077675	-0.170612	-o. 174856	-o. 156895	1 .oooooo	0.623116
ins losses	-0.036011	-0.065928	-o. 112547	-0.075970	-0.006359	0.623116	1 .oooooo

sns. heatmap(corr , annot=T rue, cmap--"YIGnBu")

<Axes: >



Inferance: The above data is the correlation of the car crashs data. Where we can observe the clear correaltion between each and every info of the car crashs data.