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

21BCE9822-GUDIVADA VENKATA SESHA SAI DEEPAK

Data visualisation for car_crashes

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

1 to 25 of 51 entries Filter

index	total	speeding	alcohol	not_distracted	no_previous	i
0	18.8	7.332000000000001	5.64	18.048	15.04	
1	18.1	7.421	4.525	16.290000000000003	17.014	
2	18.6	6.51	5.208000000000001	15.624	17.856	
3	22.4	4.032	5.824	21.056	21.28	
4	12.0	4.2	3.36	10.92	10.68	
5	13.6	5.032	3.808	10.743999999999998	12.92	
6	10.8	4.968	3.888	9.396	8.856	
7	16.2	6.156000000000001	4.86	14.094	16.038	
8	5.9	2.006	1.5930000000000002	5.9	5.9	
9	17.9	3.759	5.190999999999999	16.468	16.826	
10	15.6	2.964	3.9	14.82	14.508	
11	17.5	9.45	7.175	14.35	15.225	
12	15.3	5.508000000000001	4.437	13.005	14.994000000000002	
13	12.8	4.6080000000000005	4.352	12.032	12.288000000000002	
14	14.5	3.625	4.205	13.775	13.775	
15	15.7	2.669	3.925	15.229	13.659	
16	17.8	4.806	4.272	13.706	15.13	
17	21.4	4.066	4.922	16.691999999999997	16.264	
18	20.5	7.175	6.765	14.965	20.09	
19	15.1	5.738	4.53	13.137	12.684	
20	12.5	4.25	4.0	8.875	12.375	
21	8.2	1.886	2.87	7.134	6.56	
22	14.1	3.384	3.948	13.395	10.857	
23	9.6	2.208	2.784	8.448	8.448	
24	17.6	2.64	5.456	1.76	17.6	

Show 25 per page 1 2 3

```
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
```

```
df.head()
```

	total	speeding	alcohol	not_distracted	no_previous	ins_premium	ins_losses	abbrev
0	18.8	7.332	5.640	18.048	15.040	784.55	145.08	AL
1	18.1	7.421	4.525	16.290	17.014	1053.48	133.93	AK
2	18.6	6.510	5.208	15.624	17.856	899.47	110.35	AZ
3	22.4	4.032	5.824	21.056	21.280	827.34	142.39	AR
4	12.0	4.200	3.360	10.920	10.680	878.41	165.63	CA

```
df.tail()
```

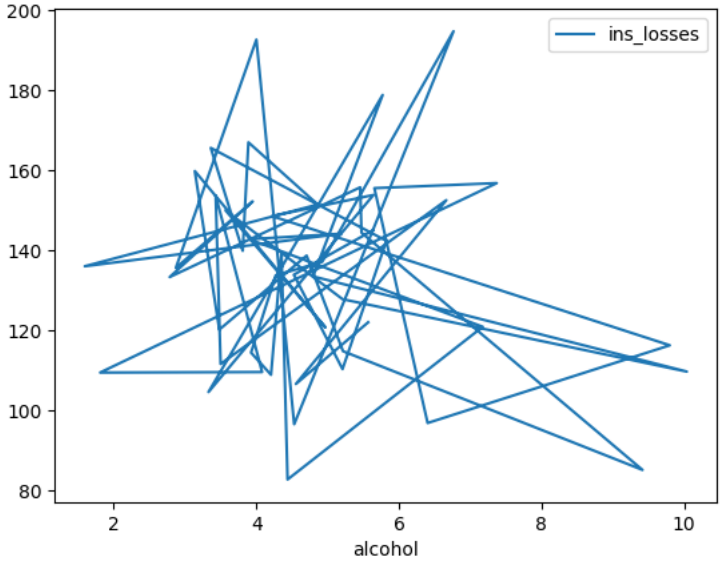
	total	speeding	alcohol	not_distracted	no_previous	ins_premium	ins_losses	abbrev
46	12.7	2.413	3.429	11.049	11.176	768.95	153.72	VA
47	10.6	4.452	3.498	8.692	9.116	890.03	111.62	WA
48	23.8	8.092	6.664	23.086	20.706	992.61	152.56	WV
49	13.8	4.968	4.554	5.382	11.592	670.31	106.62	WI
50	17.4	7.308	5.568	14.094	15.660	791.14	122.04	WY

Line Graph

total

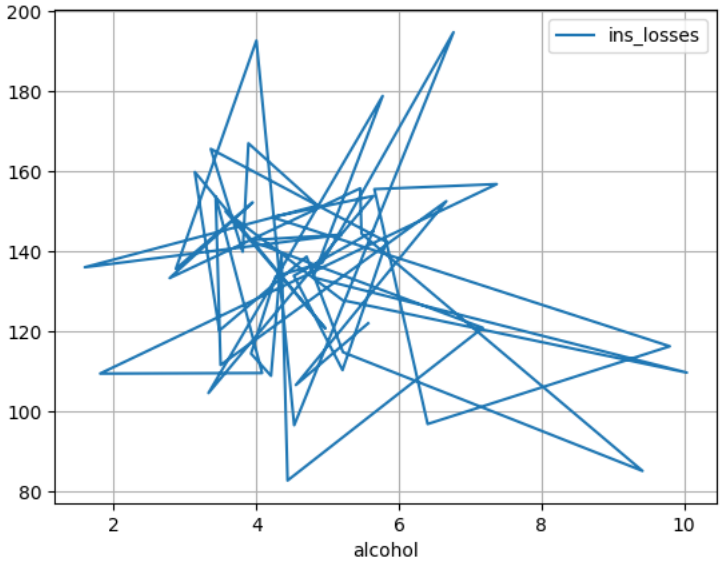
```
df.plot(x="alcohol",y="ins_losses")
```

```
<Axes: xlabel='alcohol'>
```



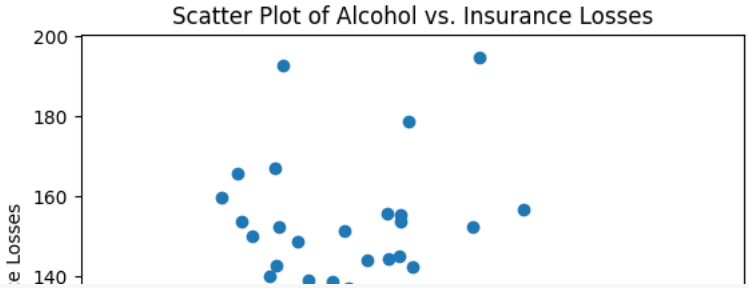
Grid

```
df.plot(x="alcohol",y="ins_losses",ms=20)
plt.grid()
```

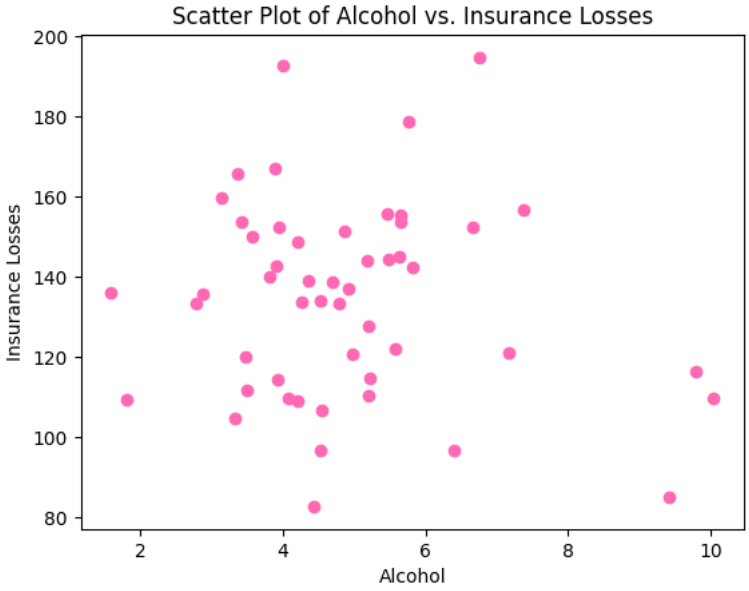


Scatter Plot

```
plt.scatter(x=df["alcohol"], y=df["ins_losses"])
plt.xlabel("Alcohol")
plt.ylabel("Insurance Losses")
plt.title("Scatter Plot of Alcohol vs. Insurance Losses")
plt.show()
```



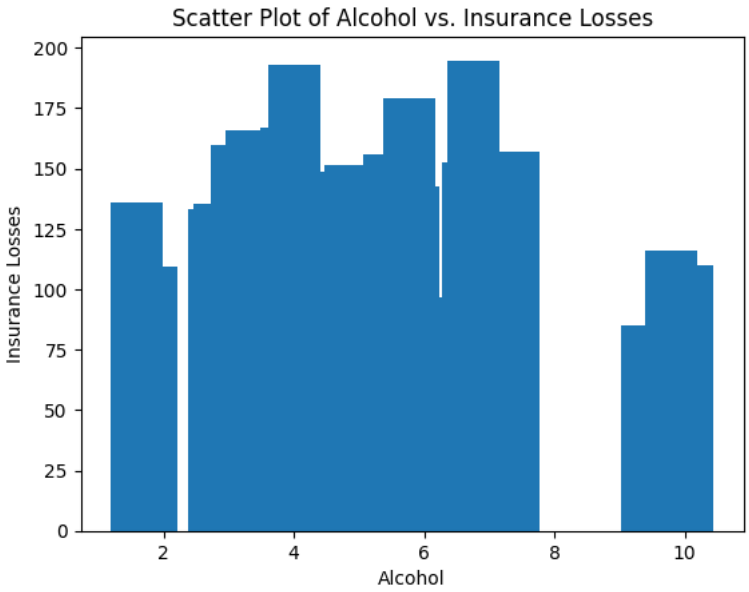

```
plt.scatter(x=df["alcohol"], y=df["ins_losses"],color='hotpink')
plt.xlabel("Alcohol")
plt.ylabel("Insurance Losses")
plt.title("Scatter Plot of Alcohol vs. Insurance Losses")
plt.show()
```



Bar Chart

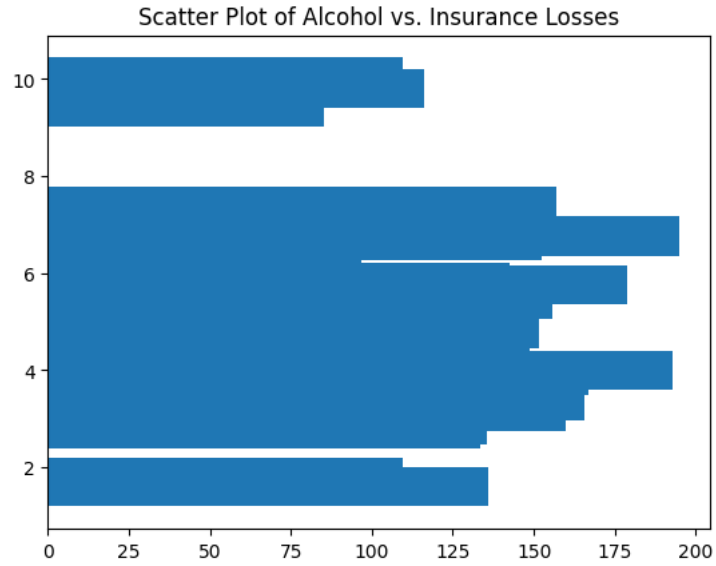
```
x = np.array(df["alcohol"])
y = np.array(df["ins_losses"])
plt.xlabel("Alcohol")
plt.ylabel("Insurance Losses")
plt.title("Scatter Plot of Alcohol vs. Insurance Losses")
plt.bar(x,y)
```

```
<BarContainer object of 51 artists>
```



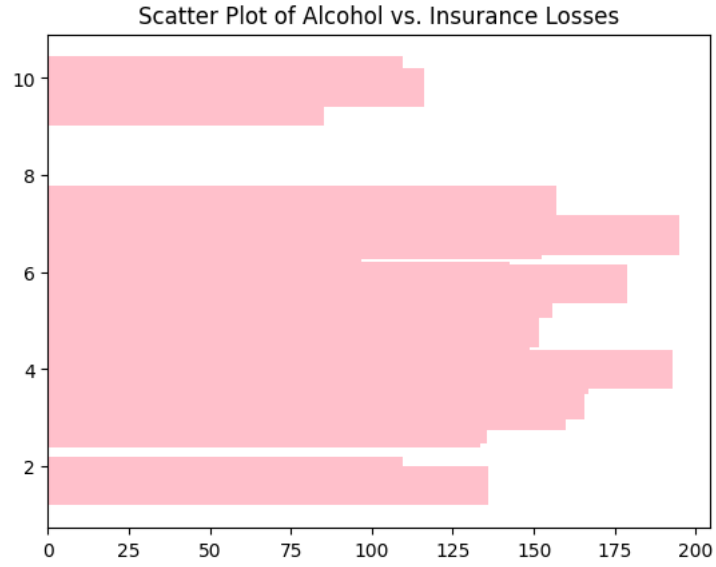
```
x = np.array(df["alcohol"])
y = np.array(df["ins_losses"])
plt.title("Scatter Plot of Alcohol vs. Insurance Losses")
plt.barh(x,y)
```

```
<BarContainer object of 51 artists>
```



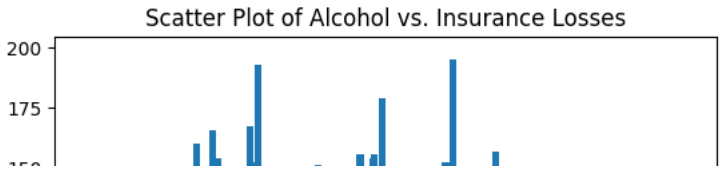

```
x = np.array(df["alcohol"])
y = np.array(df["ins_losses"])
plt.title("Scatter Plot of Alcohol vs. Insurance Losses")
plt.barh(x,y,color='pink')
```

```
<BarContainer object of 51 artists>
```




```
x = np.array(df["alcohol"])
y = np.array(df["ins_losses"])
plt.title("Scatter Plot of Alcohol vs. Insurance Losses")
plt.bar(x,y,width=0.1)
```

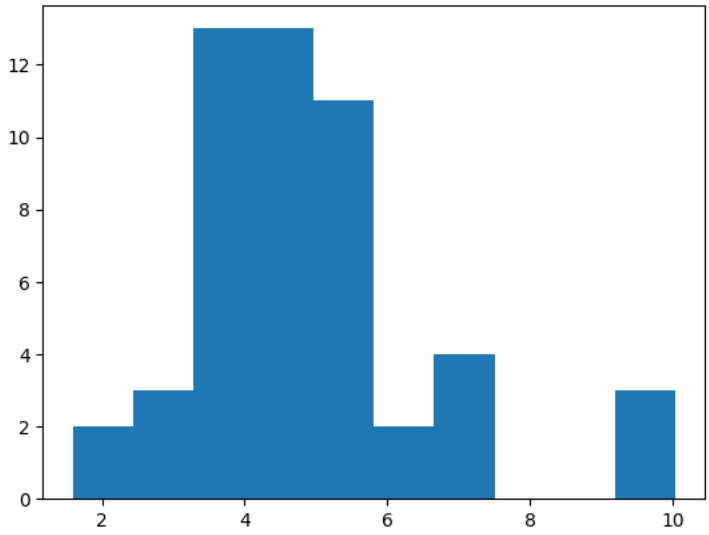
```
<BarContainer object of 51 artists>
```



Histogram

```
plt.hist(df['alcohol'])
plt.show
```

```
<function matplotlib.pyplot.show(close=None, block=None)>
```



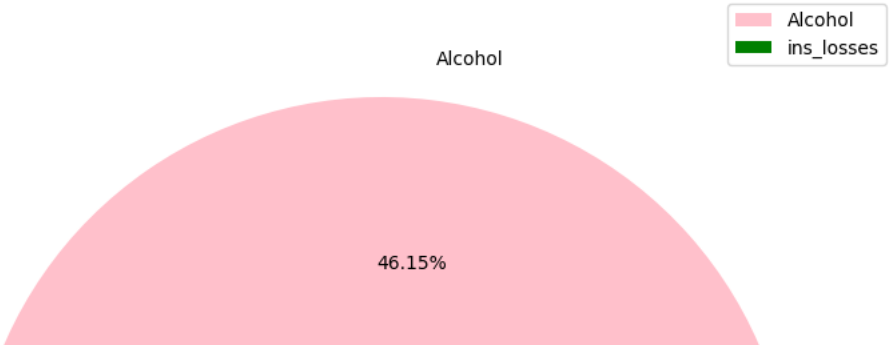
Pie Chart

```
import matplotlib.pyplot as plt

labels = ["Alcohol", "ins_losses"]
x = [60, 70]

fig, axes1 = plt.subplots(figsize=(10, 10))
axes1.pie(x, labels=labels, autopct='%0.2f%%', colors=["pink", "green"])
axes1.legend(labels, loc="best")

plt.show()
```

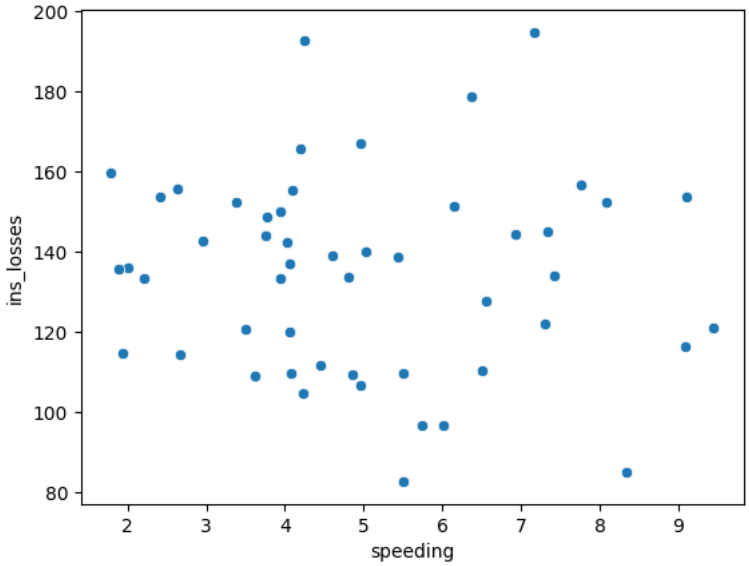


Seaborn

ScatterPlot

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

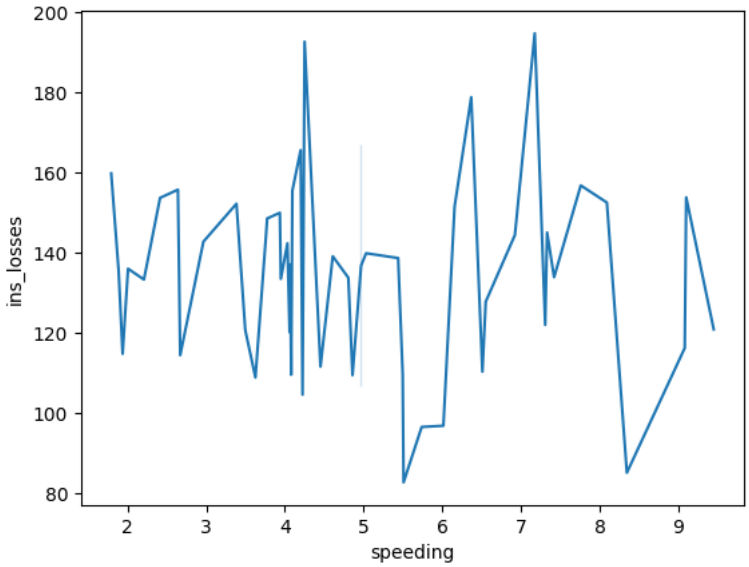
```
<Axes: xlabel='speeding', ylabel='ins_losses'>
```



LinePlot

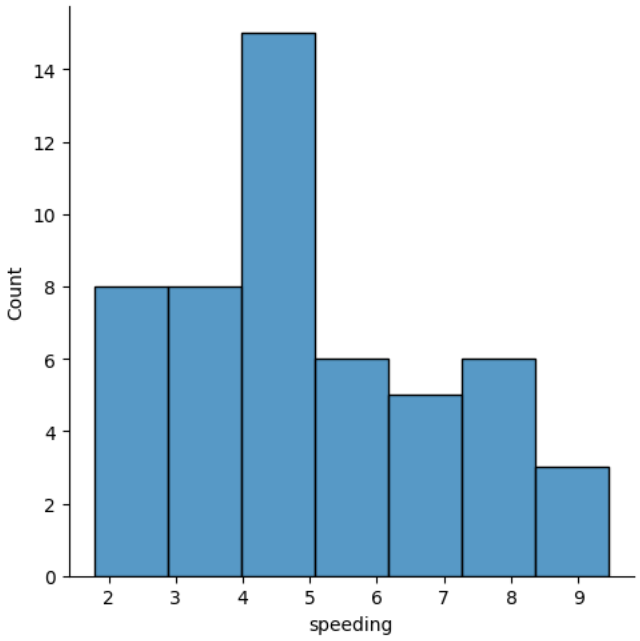
```
sns.lineplot(x="speeding",y="ins_losses",data=df)
```

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



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

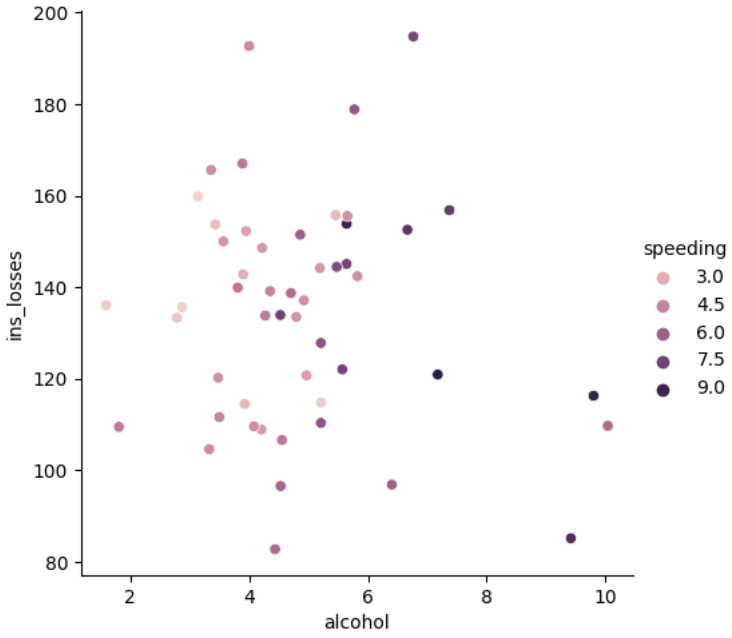
```
<seaborn.axisgrid.FacetGrid at 0x7c9f92d42cb0>
```



Relplot

```
sns.relplot(x='alcohol',y='ins_losses',data=df,hue='speeding')
```

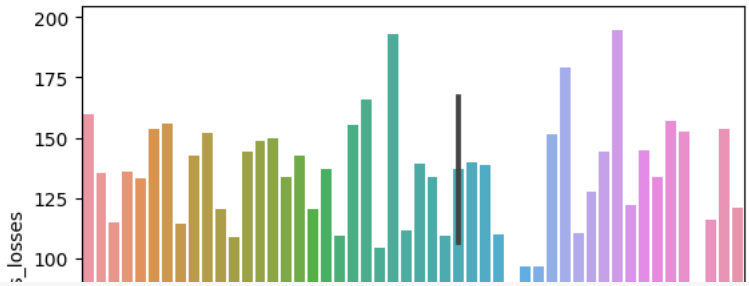
```
<seaborn.axisgrid.FacetGrid at 0x7c9f92ad47c0>
```



Barplot

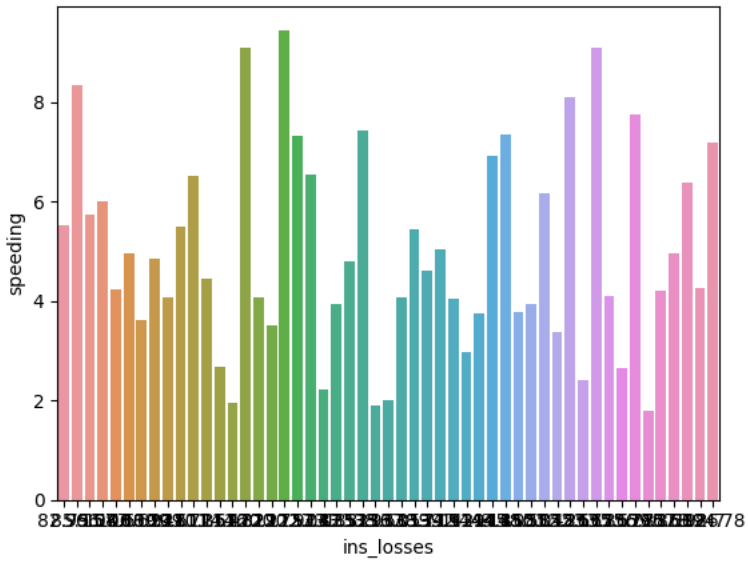
```
sns.barplot(data=df,x="speeding",y="ins_losses")
```

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




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

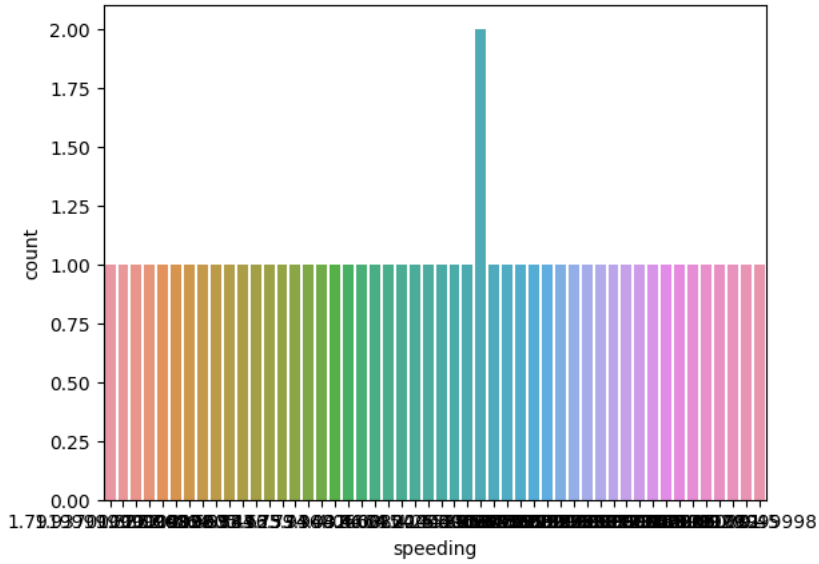
```
<Axes: xlabel='ins_losses', ylabel='speeding'>
```



Countplot

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

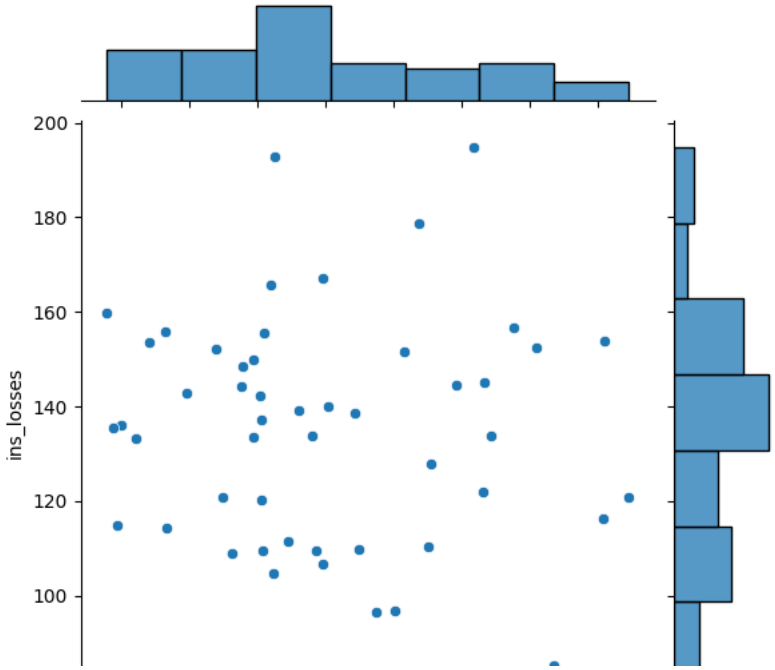
```
<Axes: xlabel='speeding', ylabel='count'>
```



Joint Plot

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

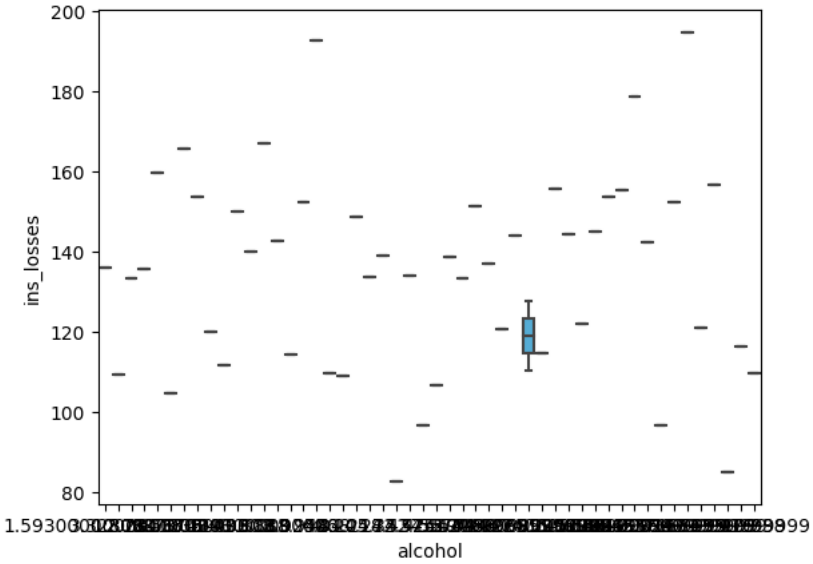
```
<seaborn.axisgrid.JointGrid at 0x7c9f9223a8c0>
```



Box Plot

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

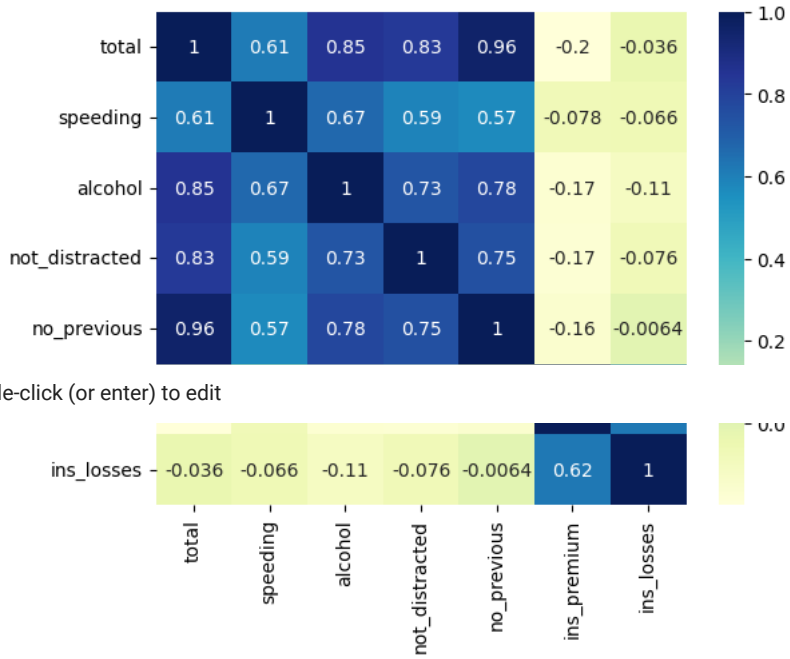
```
<Axes: xlabel='alcohol', ylabel='ins_losses'>
```



Heatmap

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

```
<ipython-input-25-d6f57e9457eb>:1: FutureWarning: The default value of numeric_only in DataFrame.corr is deprecated. In a
  df.corr()
<ipython-input-25-d6f57e9457eb>:2: FutureWarning: The default value of numeric_only in DataFrame.corr is deprecated. In a
  corr=df.corr()
<Axes: >
```



Double-click (or enter) to edit

✓ 1s completed at 9:33 PM