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COURSE:ECE

n [1]: I pip install seaborn

Requirement already satisfied: seaborn in c :\users\lokes\eclipse-workspace\.jyupte r\lib\site-packages (0.12.2)
Requirement already satisfied: numpy!=1.24.0, >=1.17 in c:\users\lokes\eclipse-work space\.jyupter\lib\site-packages (from seaborn) (1.24.3)
Requirement already satisfied: pandas >=0.25 in c:\users\lokes\eclipse-workspace\.j yupter\lib\site-packages (from seaborn) (1.5.3)
Requirement already satisfied: matplotlib!=3.6.1,>=3.1 in c:\users\lokes\eclipse-w orkspace\.jyupter\lib\site-packages (from seaborn) (3.7.1)
Requirement already satisfied: in c:\users\lokes\eclipse-workspac e\.jyupter\lib\site-packages (from (I . e . 5) Requirement already satisfied: cycler>=0.10 in c:\users\lokes\eclipse-workspace\.j yupter\lib\site-packages (from matp10t1ib!=3.6.1,>=3.1->seaborn) (0.11.0)
Requirement already satisfied: fontt001s>=4.22.0 in c:\users\lokes\eclipse-workspa ce\.jyupter\lib\site-packages (from matplotlib!=3.6.1, >=3.1->seaborn) (4.25.0)
Requirement already satisfied: kiwi solver>=l.e.l in c:\users\lokes\eclipse-workspa ce\.jyupter\lib\site-packages (from matp10t1ib!=3.6.1, >=3.1->seaborn) (1.4.4)
Requirement already satisfied: packaging>=2Ø.e in c:\users\lokes\eclipse-workspace \.jyupter\lib\site-packages (from matplotlib!=3.6.1,>=3.1->seaborn) (23.0)
Requirement already satisfied: pillow>=6.2.e in c:\users\lokes\eclipse-workspace\. jyupter\lib\site-packages (from matp10t1ib!=3.6.1,>=3.1->seaborn) (9.4.0)
Requirement already satisfied: pyparsing>=2.3.1 in c:\users\lokes\eclipse-workspac e\.jyupter\lib\site-packages (from matplotlib!=3.6.1,>=3.1->seaborn) (3.0.9)
Requirement already satisfied: python-dateuti1>=2.7 in c:\users\lokes\eclipse-work space\.jyupter\lib\site-packages (from matp10t1ib!=3.6.1, >=3.1->seaborn) (2.8.2)
Requirement already satisfied: pytz>=2Ø2e.1 in c:\users\lokes\eclipse-workspace\.j yupter\lib\site-packages (from pandas>=e.25->seaborn) (2022.7)
Requirement already satisfied: six>=1.5 in c:\users\lokes\eclipse-workspace\.jyupt er\lib\site-packages (from python-dateutil>=2.7->matplotlib!=3.6.1,>=3.1->seaborn)(1 . 16.0)

In import seaborn as sns

n [3]: print (sns . et_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']

[4]:
```
df=sns.load_dataset('car_crashes')
```

Out [5] :

	total	speeding	alcohol	not distracted	no_previous	ins_premium	ins losses	abbrev
o	18.8	7.332	5.640	18.048	15.040	784.55	145.08	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	1 10.35	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
5	13.6	5.032	3.808	10.744	12.920	835.50	139.91	co
6	10.8	4.968	3.888	9.396	8.856	1068.73	167.02	CT
7	16.2	6.1 56	4.860	14.094	16.038	1 137.87	151.48	DE
8	5.9	2.006	1.593	5.900	5.900	1273.89	136.05	DC
9	17.9	3.759	5.191	16.468	16.826	1 160.13	144.18	FL
10	15.6	2.964	3.900	14.820	14.508	913.1 5	142.80	GA
11	17.5	9.450	7.175	14.350	15.225	861.18	120.92	12
15.3	5.508	4.437	13.005	14.994	641.96	82.75	ID	
13	12.8	4.608	4.352	12.032	12.288	803.1 1	139.15	14
14.5	3.625	4.205	13.775	13.775	710.46	108.92	IN	
15	15.7	2.669	3.925	15.229	13.659	649.06	1 14.47	I16
17.8	4.806	4.272	13.706	15.130	780.45	133.80	KS	
17	21.4	4.066	4.922	16.692	16.264	872.51	137.13	KY
18	20.5	7.175	6.765	14.965	20.090	1281.55	194.78	L19
15.1	5.738	4.530	13.137	12.684	661.88	96.57	ME	
20	12.5	4.250	4.000	8.875	12.375	1048.78	192.70	MD
21	8.2	1.886	2.870	7.134	6.560	101 1.14	135.63	MA
22	14.1	3.384	3.948	13.395	10.857	1 1	10.61	152.26
Ml								
23	9.6	2.208	2.784	8.448	8.448	777.18	133.35	MN
24	17.6	2.640	5.456	1.760	17.600	896.07	155.77	MS
25	16.1	6.923	5.474	14.812	13.524	790.32	144.45	MO
26	21.4	8.346	9.416	17.976	18.190	816.21	85.15	MT
27	14.9	1.937	5.215	13.857	13.410	732.28	1 14.82	NE
28	14.7	5.439	4.704	13.965	14.553	1029.87	138.71	NV
29	1 1.6	4.060	3.480	10.092	9.628	746.54	120.21	N30
1	1.2	1.792	3.136	9.632	8.736	1301.52	159.85	NJ
31	18.4	3.496	4.968	12.328	18.032	869.85	120.75	NM
32	12.3	3.936	3.567	10.824	9.840	1234.31	150.01	NY
33	16.8	6.552	5.208	15.792	13.608	708.24	127.82	NC
34	23.9	5.497	10.038	23.661	20.554	688.75	109.72	ND
35	14.1	3.948	4.794	13.959	1 1.562	697.73	133.52	OH

total	speeding	alcohol	not distracted	no_previous	ins_premium	ins losses	abbrev
36	19.9	6.368	5.771	18.308	18.706	881.51	178.86	OK
37	12.8	4.224	3.328	8.576	1 1.520	804.71	104.61	OR
38	18.2	9.100	5.642	17.472	16.016	905.99	153.86	PA

39	1 1.1	3.774	4.218	10.212	8.769	1 148.99	148.58	RI
40	23.9	9.082	9.799	22.944	19.359	858.97	1 16.29	sc
41	19.4	6.014	6.402	19.012	16.684	669.31	96.87	SD
42	19.5	4.095	5.655	15.990	1 5.795	767.91	155.57	TN
43	19.4	7.760	7.372	17.654	16.878	1004.75	156.83	-rx
44	1 1.3	4.859	1.808	9.944	10.848	809.38	109.48	UT
45	13.6	4.080	4.080	13.056	12.920	716.20	109.61	VT
46	12.7	2.413	3.429	1 1.049	1 1.176	768.95	153.72	VA
47	10.6	4.452	3.498	8.692	9.1 16	890.03	1 1 1.62	WA
48	23.8	8.092	6.664	23.086	20.706	992.61	152.56	W
49	13.8	4.968	4.554	5.382	1 1.592	670.31	106.62	
50	17.4	7.308	5.568	14.094	15.660	791.14	122.04	

[6]:
```
df.info()
```

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

#	Column	Non-Null Count	Dtype
	------	--------------	-----
e	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: object(l)
float64(7),
memory usage: 3.3+ KB

[7]:
```
df.head()
```

Out [7] : total speeding alcohol not distracted no_previous ins_premium ins losses abbrev

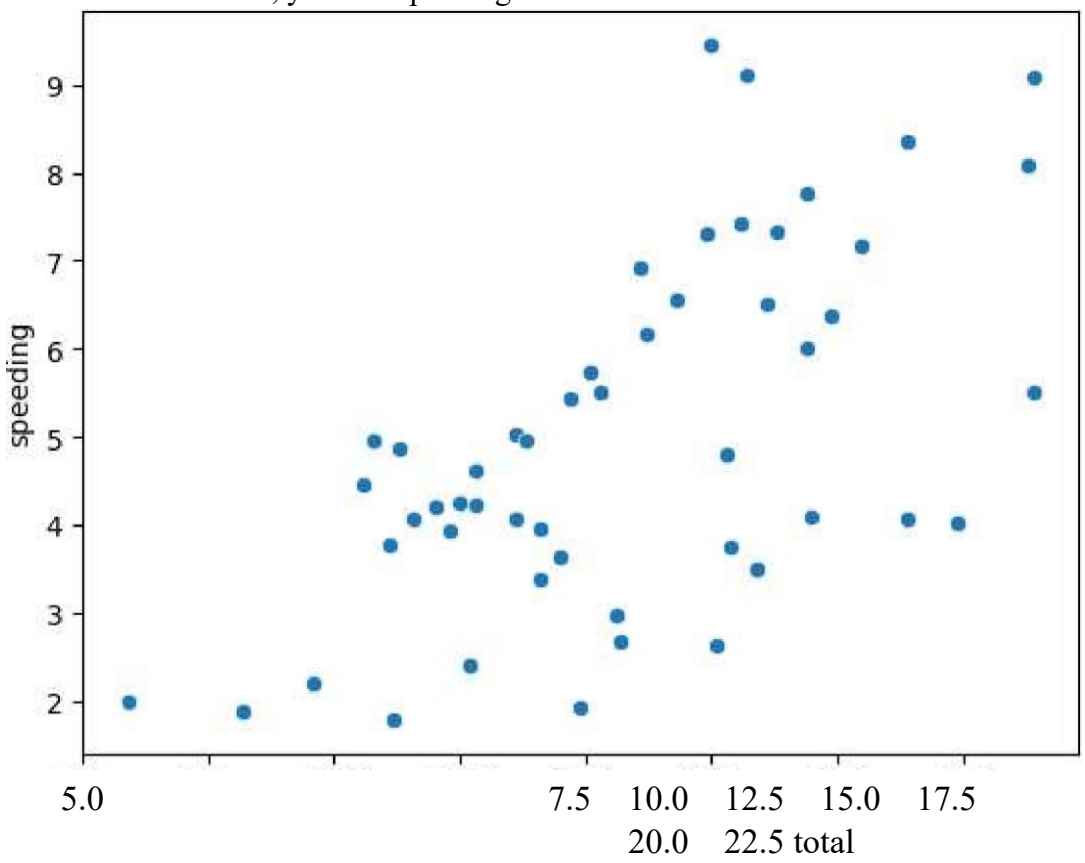
o	18.8	7.332	5.640	18.048	1 5.040	784.55	145.08	
1	18.1	7.421	4.525	16.290	17.014	1053.48	133.93	AK
2	18.6	6.510	5.208	15.624	17.856	899.47	1 10.35	AZ
3	22.4	4.032	5.824	21.056	21.280	827.34	142.39	AR
4	12.0	4.200	3.360			878.41	165.63	CA
				10.920	10.680			

Out[8]

:

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

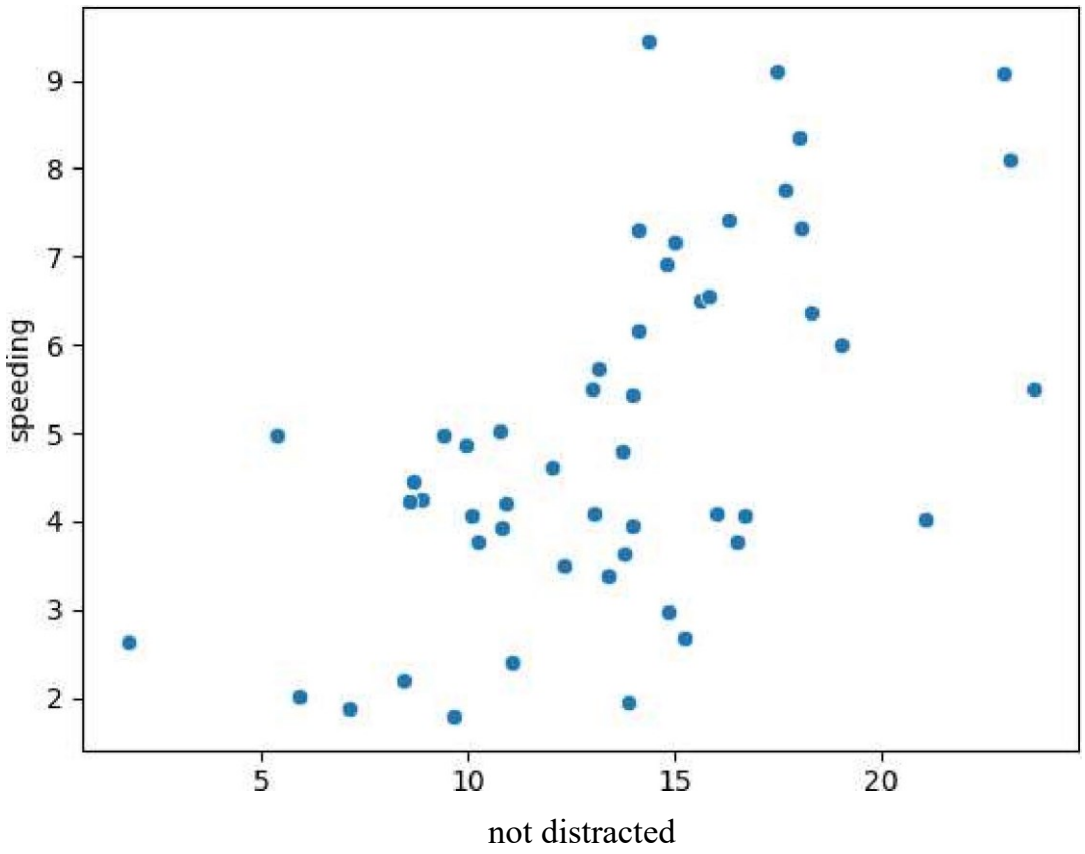
[8]: <Axes: xlabel='total' , ylabel=' speeding' >



11]: sns . scatterplot (x: " not_distracted" , y:" speeding" , data=df)

<Axes: xlabel=' not distracted ' , ylabel= ' speeding' >

Out [11] :

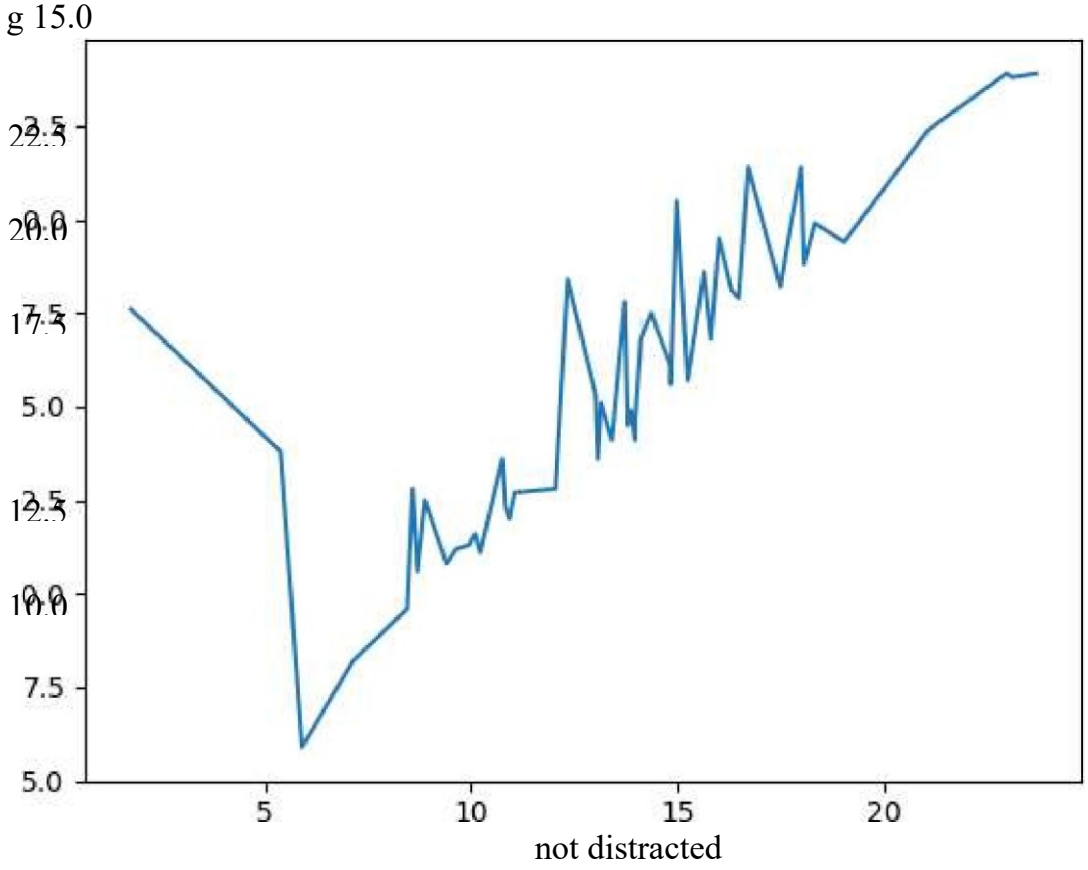


sns . lineplot (x: " not_distracted" , "total " , data=df)

<Axes: xlabel='not distracted ' , ylabel='total'>

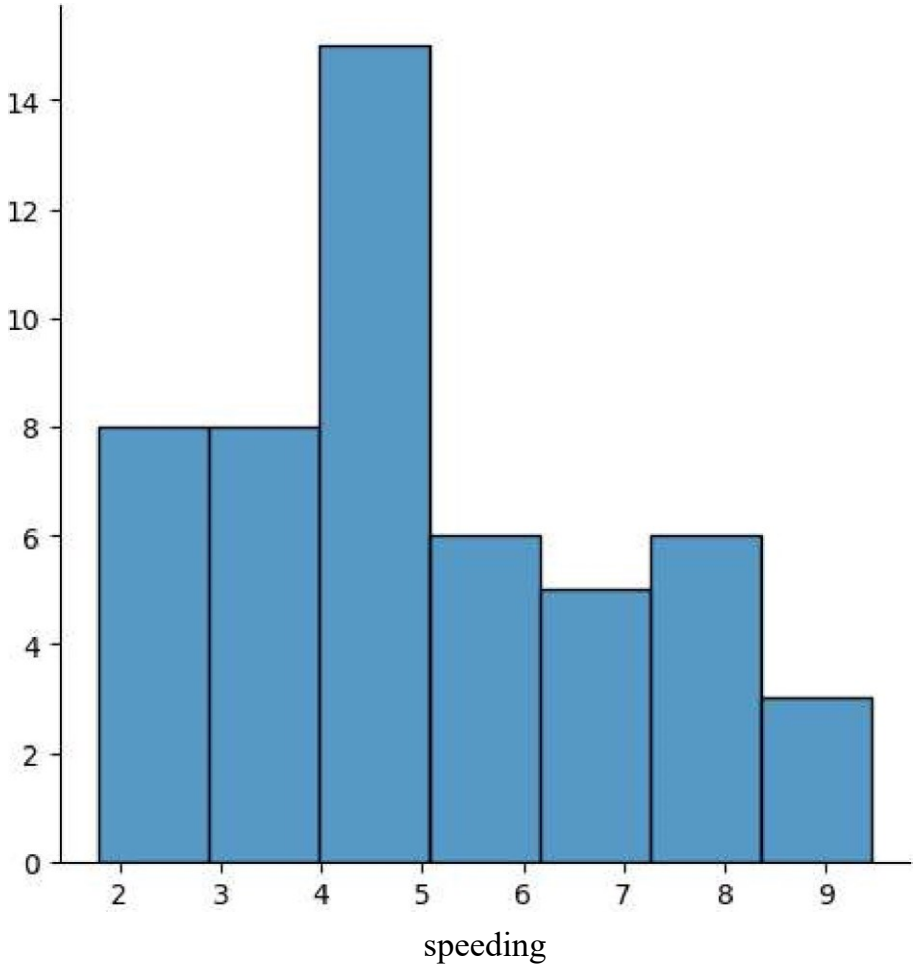
14]:

Out [14] :



In [15] : sns . displot (df[" speeding"])

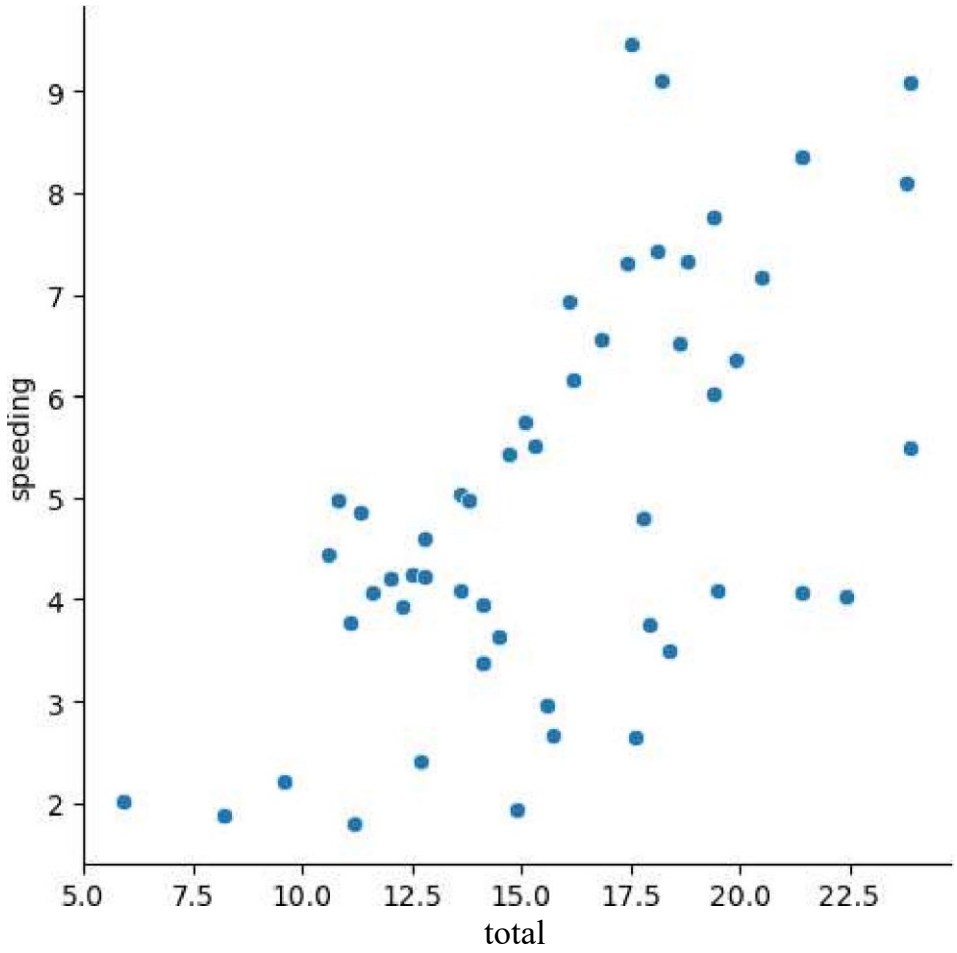
Out [15] : <seaborn.axisgrid.FacetGrid at ex1dcaaf59e90>



In [16] :

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

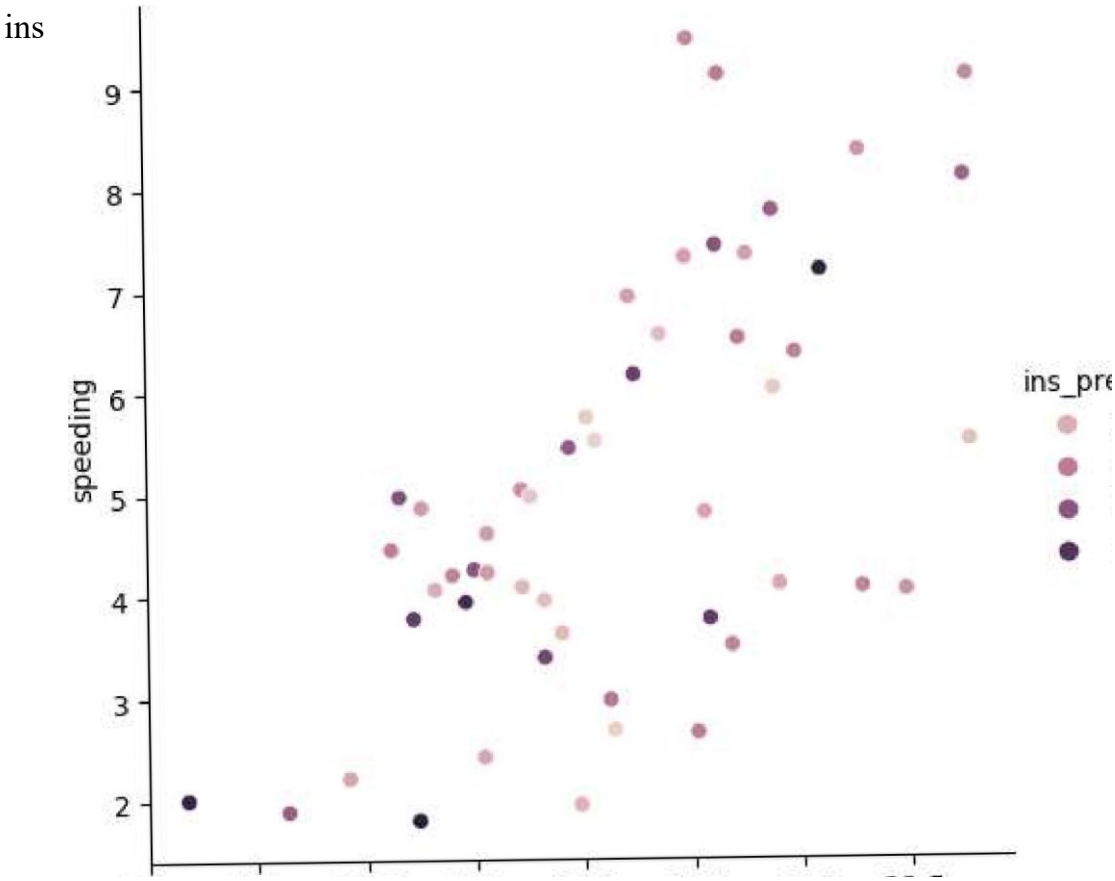
Out[16] : <seaborn.axisgrid.FacetGrid at Oxldcaa1e38d0>



15.0

20]: `sns.relplot(x="total",y="speeding",data=df,hue="ins_premium")`

Out[20] : <seaborn.axisgrid.FacetGrid at Oxldcad9c49d0>



In [21] : df[" ins _premium"] . value_counts ( )

Out[21] :

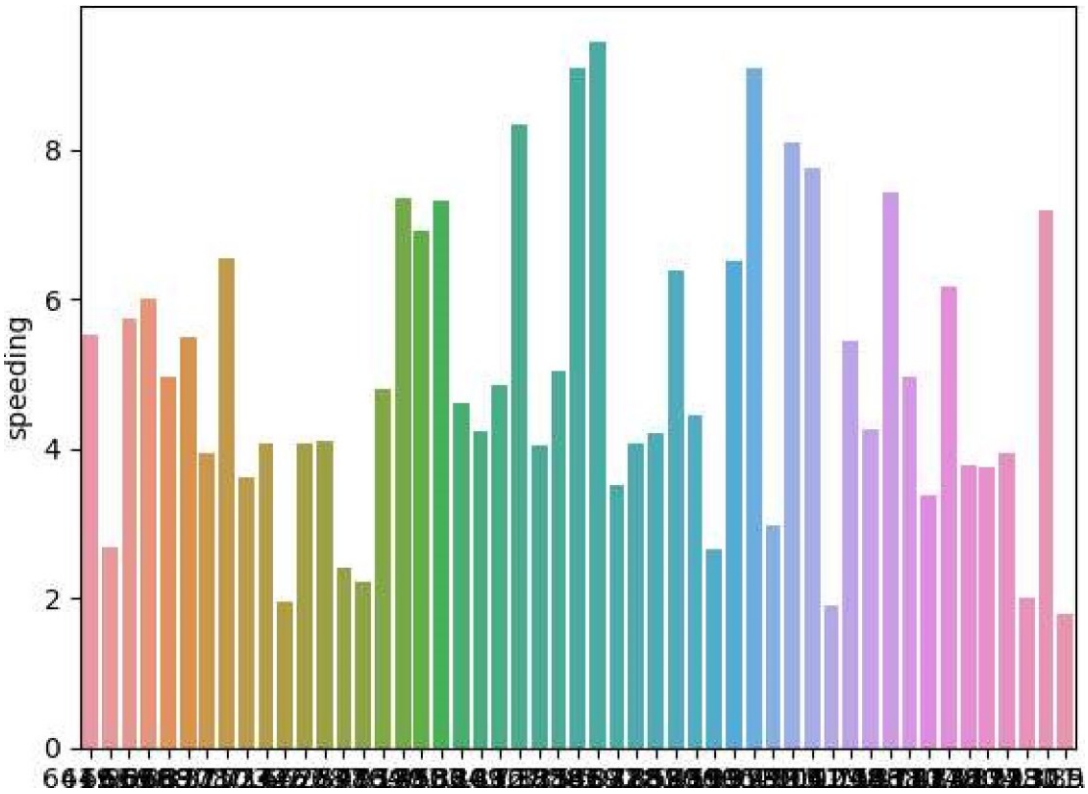
784.55	1
905.99	1
1029.87	1
746. 54	1
1301.52	1
869.85	1

```
1234.31      1
708.    24   1
688.75 1
697.73       1
881.51       1
804.71       1
1148.   99   1
816.21 1
858.97       1
669.31       1
767.91       1
1004.75      1
809.38       1
716.20       1
768.95       1
890.03       1
992.61       1
670.31       1
732.28       1
790.32       1
1053.48      1
641.96       1
899.47       1
827.34       1
878.41       1
835.50       1
1068.73 1
1137.87      1
1273.89      1
1160.13      1
913.15       1
861.18       1
803.11       1
896.07       1
710.46       1
649.06       1
780.45       1
872.51       1
1281.55      1
661.88 1
1048. 78     1
1011.   14   1
1110.61      1
777.18 1
791.14       1
Name: ins_ premium, dtype: int64
```

22]:
```
sns.barplot(data=df,x="ins_premium",y="speeding")
```

Out[22] :

<Axes: xlabel=' ins premium' , ylabel=' speeding' >

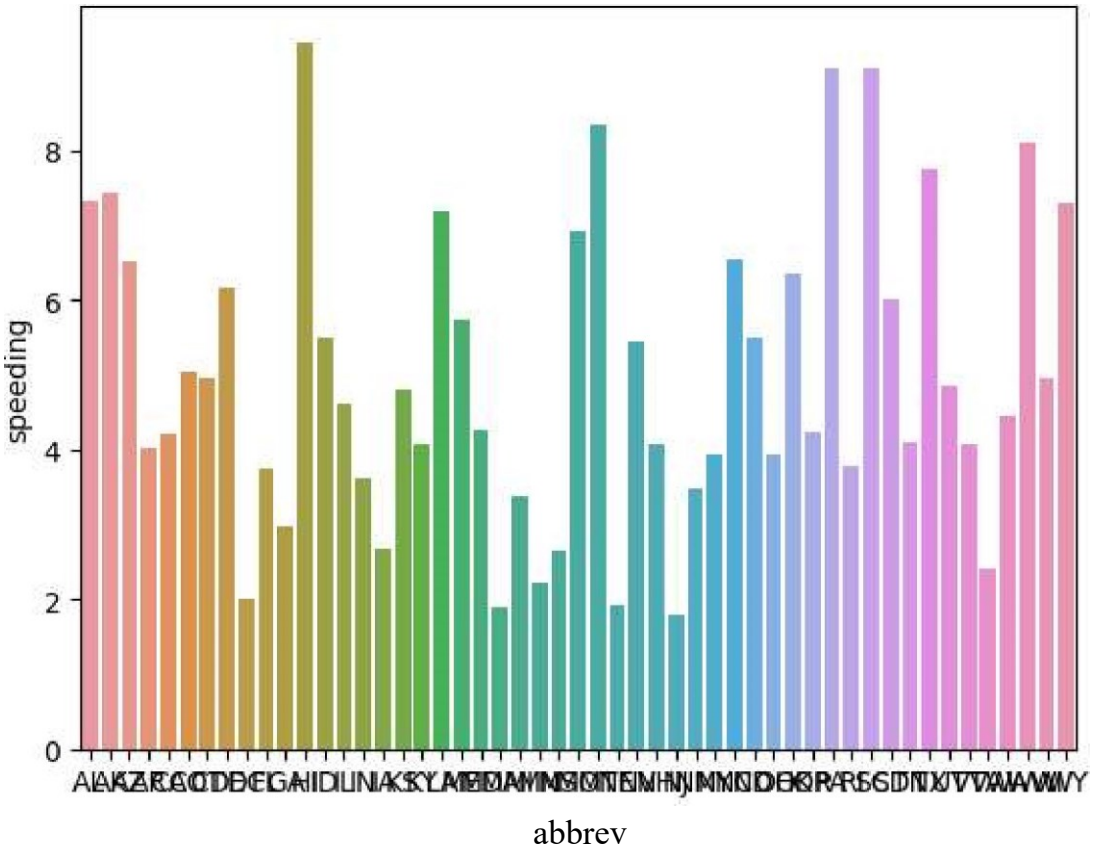


52

In [23] : sns . barplot (data=df, x: " abbrev" , y: " speeding")

<Axes: xlabel=' abbrev' , ylabel=' speeding' >

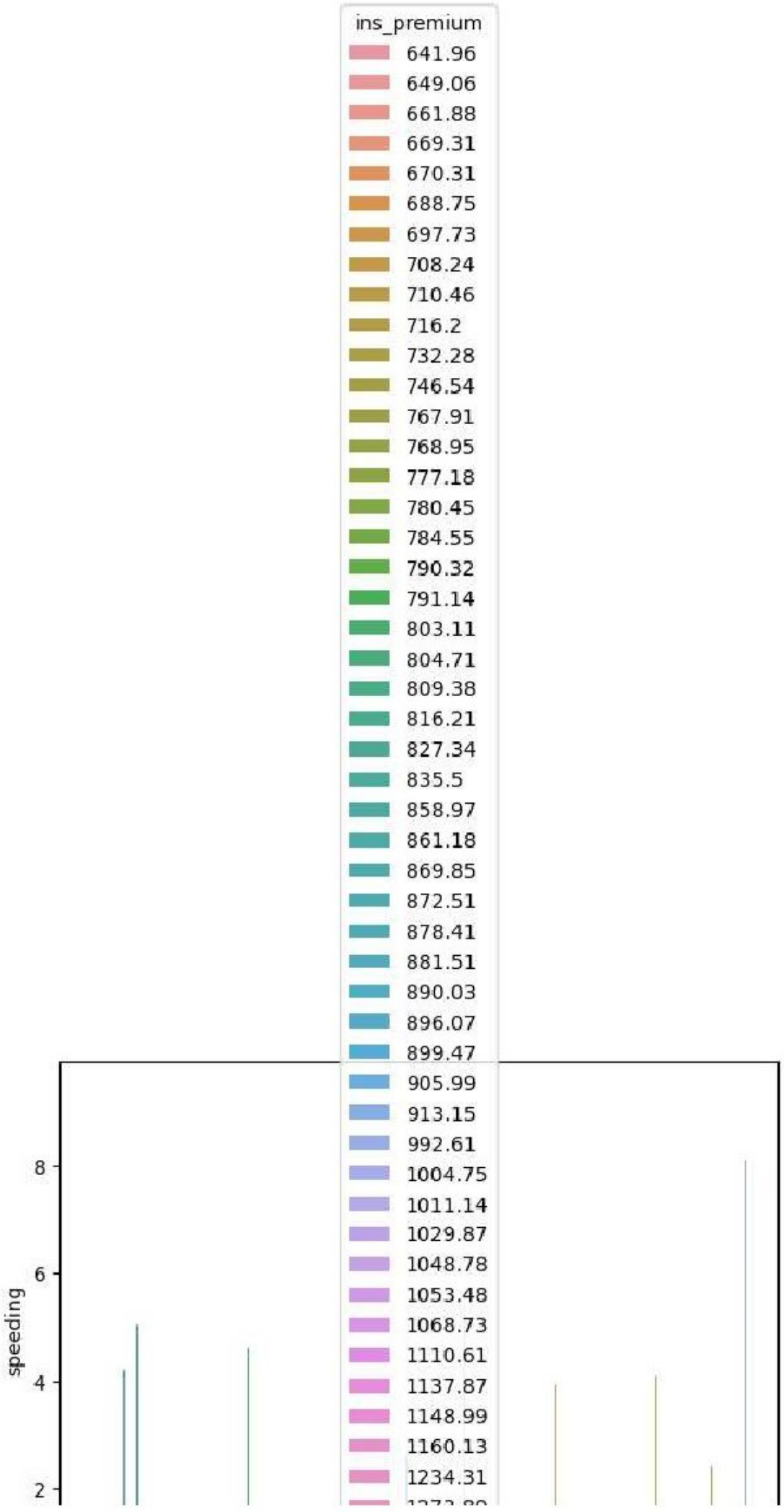
Out [23] :



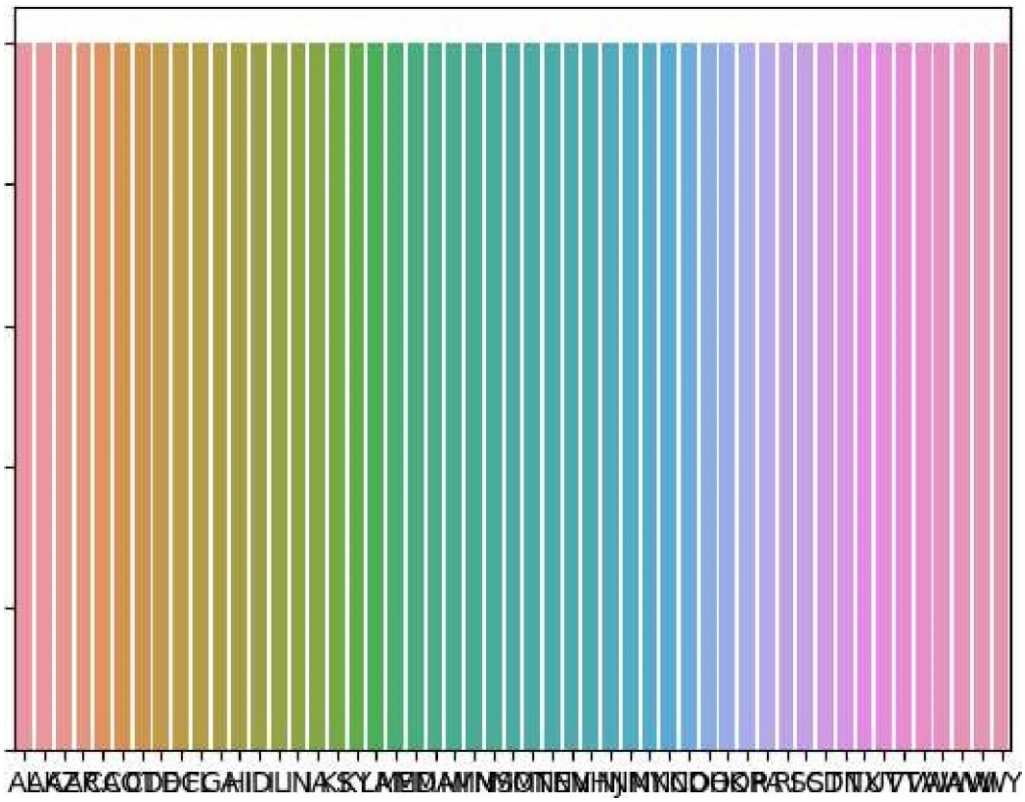
sns . barplot (data=df , x: " abbrev" , " speeding" , hue:" ins_premium"
)

26]: <Axes: xlabel='abbrev' , ylabel= ' speeding' >

Out [26] :


ins_premium
641.96
649.06
661.88
669.31
670.31
688.75
697.73
708.24
710.46
716.2
732.28
746.54
767.91
768.95
777.18
780.45
784.55
790.32
791.14
803.11
804.71
809.38
816.21
827.34
835.5
858.97
861.18
869.85
872.51
878.41
881.51
890.03
896.07
899.47
905.99
913.15
992.61
1004.75
1011.14
1029.87
1048.78
1053.48
1068.73
1110.61
1137.87
1148.99
1160.13
1234.31
speeding
8
6
4
2

abbrev



In [30] : sns . countplot (x=" abbrev" , data=df)

Out [30] : <Axes: xlabel='abbrev' , ylabel='count' >

1.0

0.8

0.6

0.4

0.2

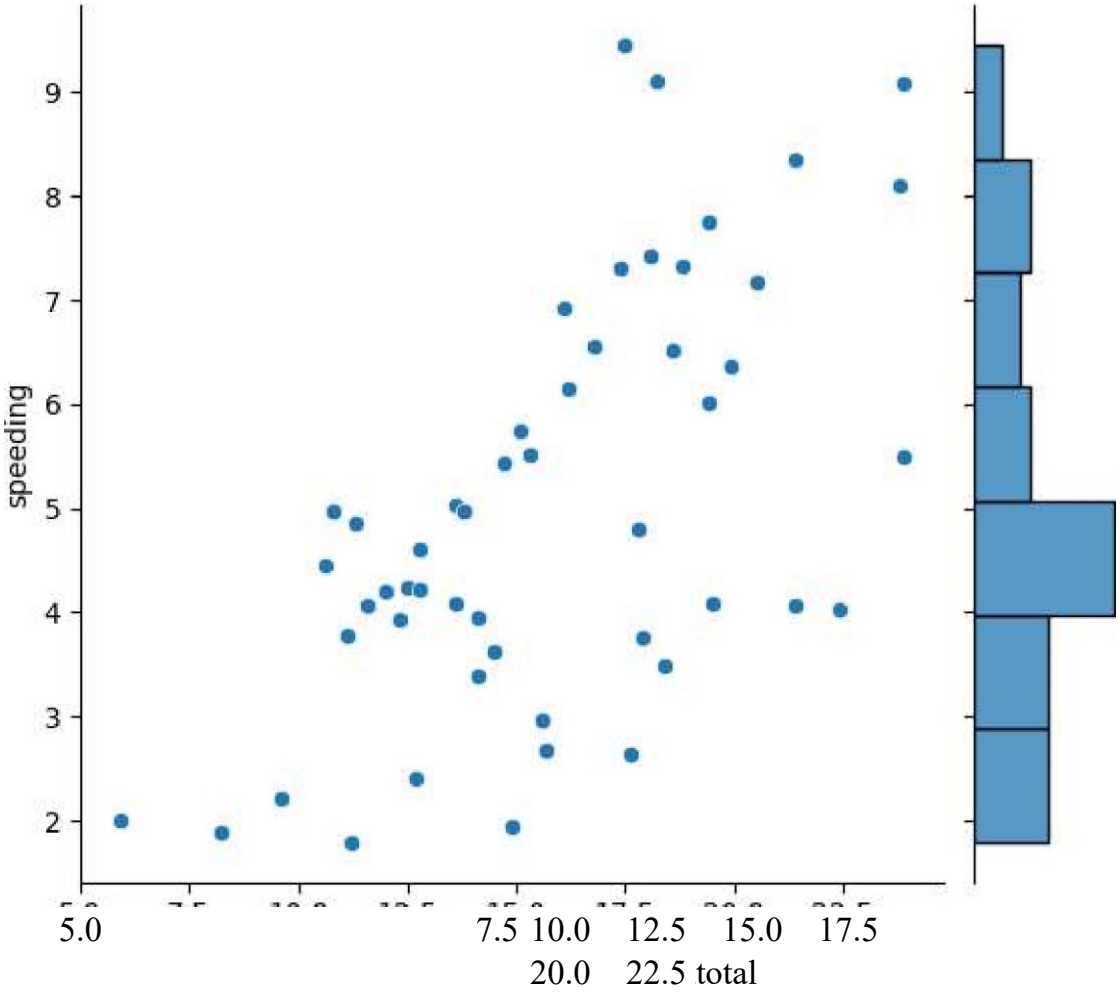
0.0

abbrev

In [29] : sns . jointplot "total " , " speeding" , data=df)

<seaborn.axisgrid.JointGrid at

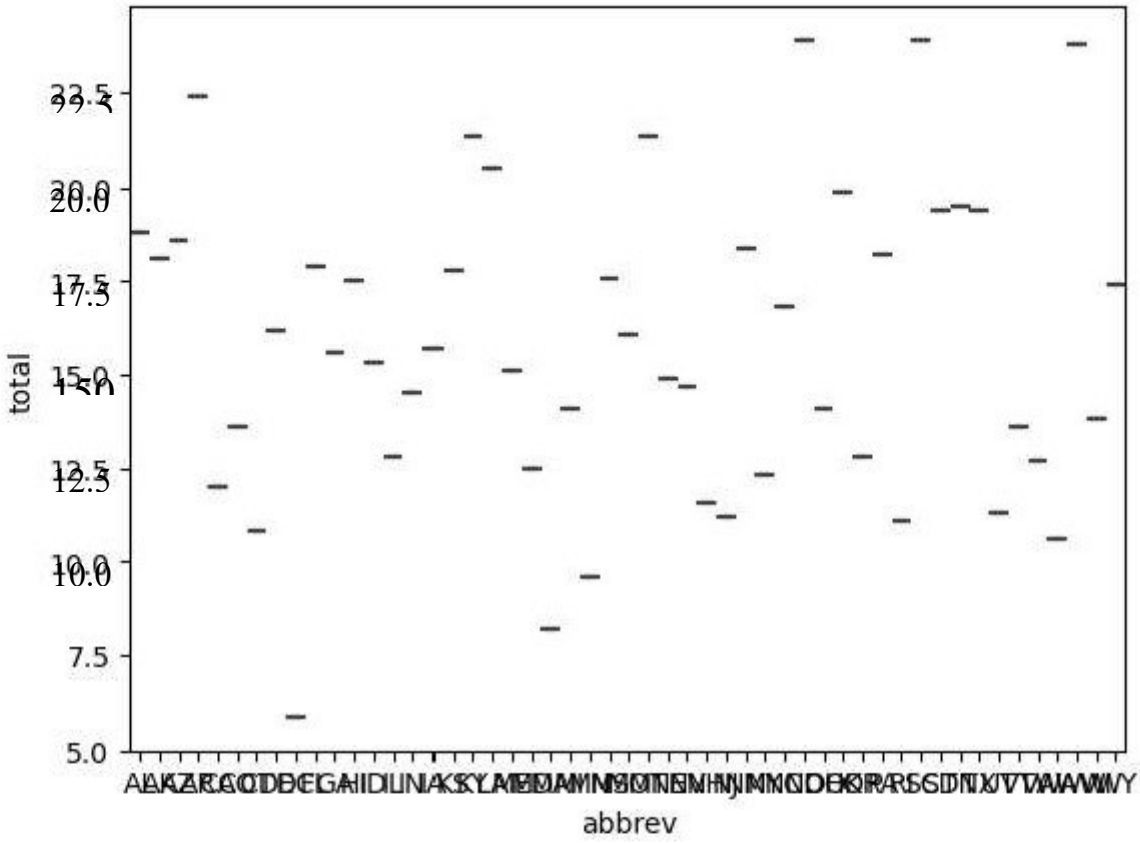
Out[29] : Oxldcba7424d0>



In [33] : sns.boxplot(x="abbrev", Y- - I 'total" ,data=df)

<Axes: xlabel='abbrev' , ylabel= 'total' ›

Out [33] :


total
abbrev