```
# results.summary(),results2.summary()
import os
cpu_percent = psutil.cpu_percent()
process = psutil.Process(os.getpid())
mem_info = process.memory_info()
memory_mb = mem_info.rss / 1024 / 1024
cpu_percent,memory_mb
```

[14] ✓ 0.0s

```
(3.3, 1346.16015625)
```

HOUSEHOLD

```
import os
cpu_percent = psutil.cpu_percent()
process = psutil.Process(os.getpid())
mem_info = process.memory_info()
memory_mb = mem_info.rss / 1024 / 1024
cpu_percent,memory_mb
```

5] ✓ 9m 59.4s

```
(2, 2, 1) (1, 1, 2, 7)
(2, 2, 1, 1, 2, 1)
```

```
(2, 2, 2) (2, 2, 2, 7)
7881.175561690473

(5.6, 1603.00390625)
```

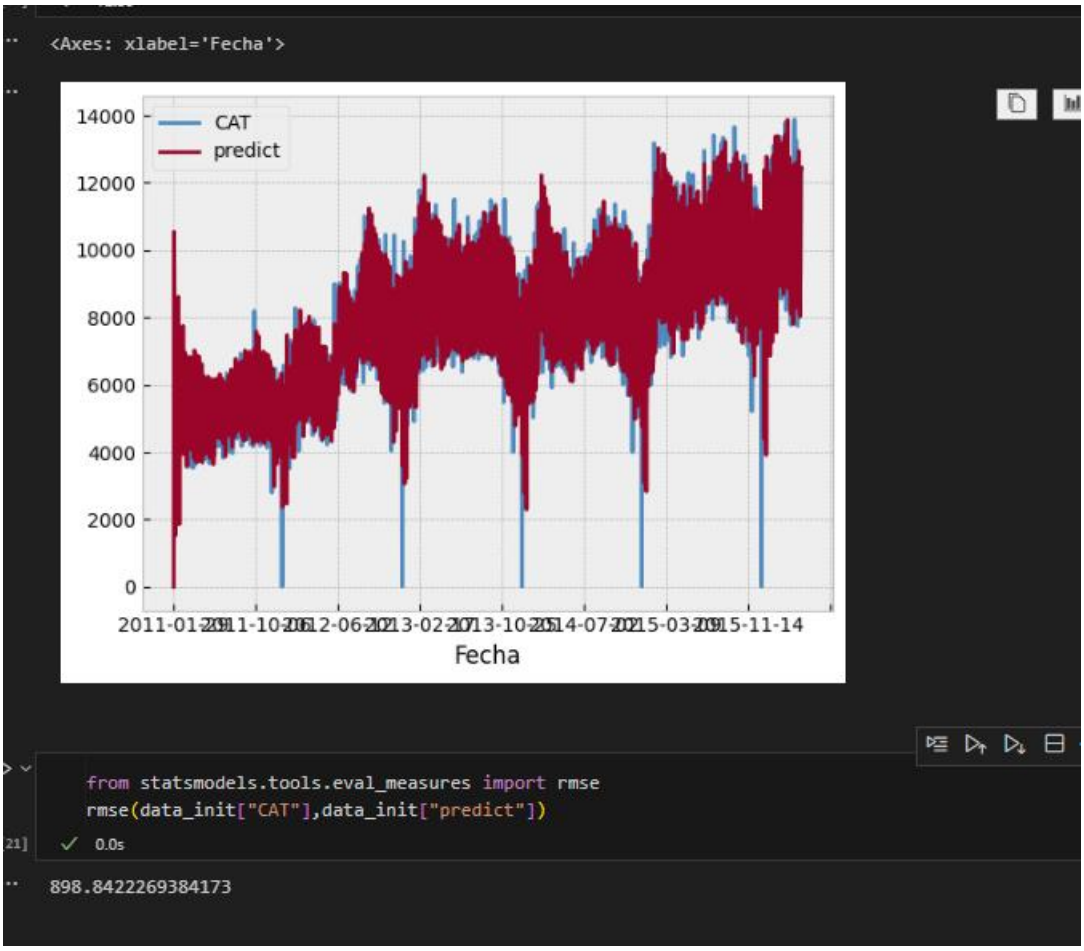
1e8

```
score_f,comb_f
```

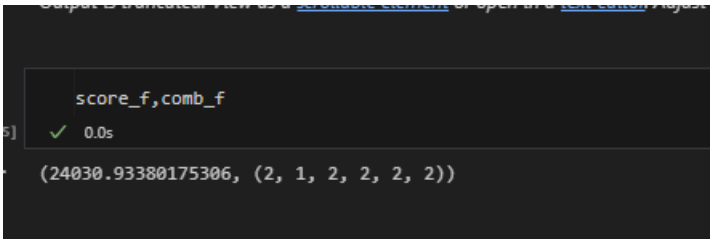
] ✓ 0.0s

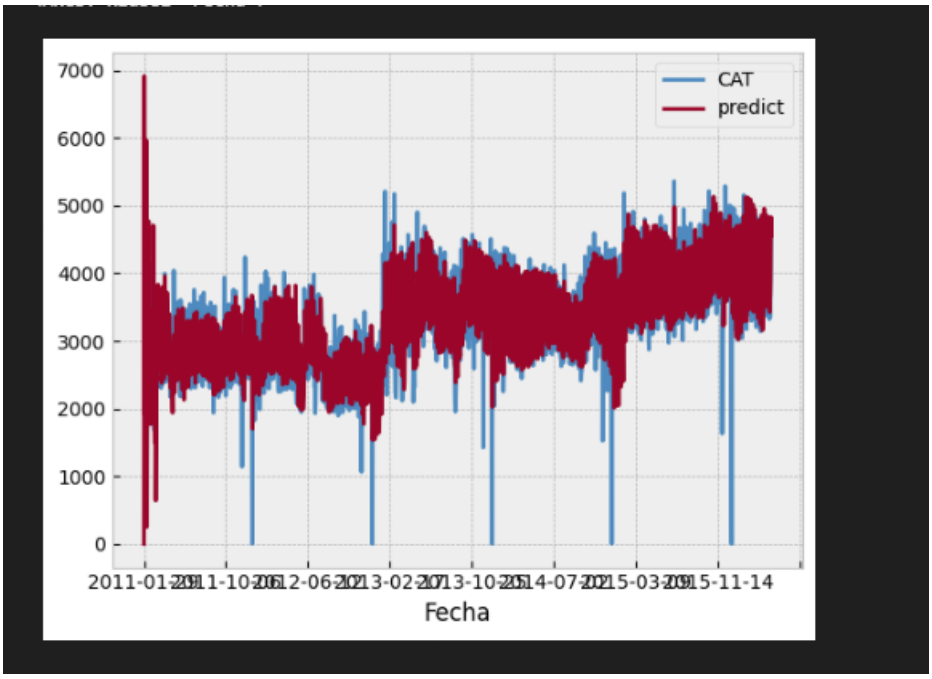
```
(30634.594871884805, (1, 1, 1, 1, 2, 2))
```

```
score_f,comb_f
# score
```


<Axes: xlabel='Fecha'>
CAT
predict
14000
12000
10000
8000
6000
4000
2000
0
Fecha
from statsmodels.tools.eval_measures import rmse
rmse(data_init["CAT"],data_init["predict"])
0.0s
898.8422269384173

#Hobbies


score_f,comb_f
0.0s
(24030.93380175306, (2, 1, 2, 2, 2, 2))




```
from statsmodels.tools.eval_measures import rmse
rmse(data_init["CAT"],data_init["predict"])
```

[27] ✓ 0.0s

```
414.35101196055547
```

```
import os
cpu_percent = psutil.cpu_percent()
process = psutil.Process(os.getpid())
mem_info = process.memory_info()
memory_mb = mem_info.rss / 1024 / 1024
cpu_percent,memory_mb
```

[28] ✓ 0.0s

```
(5.6, 573.50390625)
```

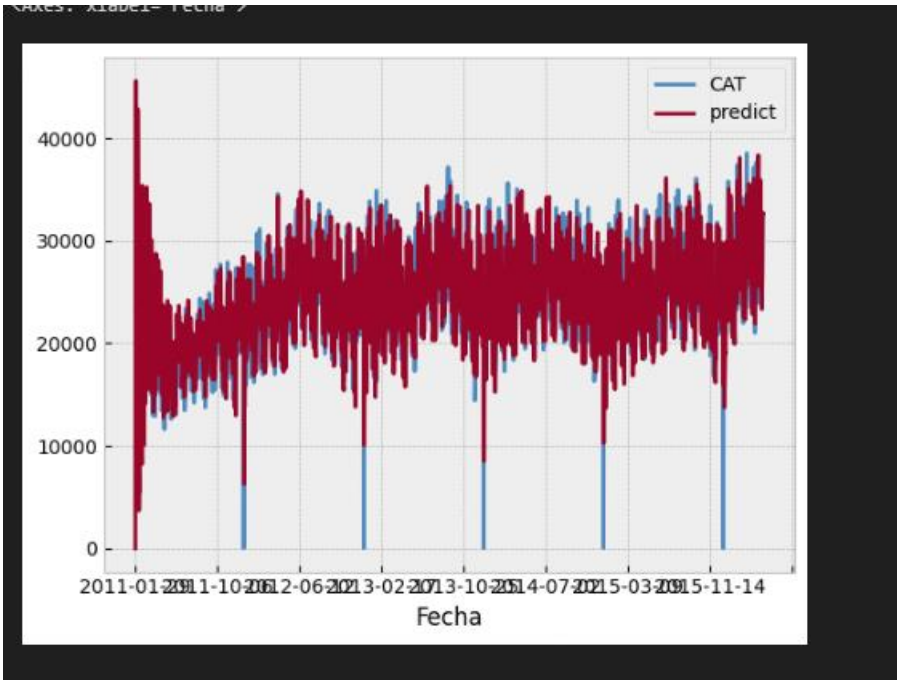
10 M 46 S

#FOODS

```
score_f,comb_f
```

✓ 0.0s

```
(35071.490905382394, (1, 1, 2, 2, 1, 1))
```




```
from statsmodels.tools.eval_measures import rmse
rmse(data_init["CAT"],data_init["predict"])
```

[33] ✓ 0.0s

```
2995.0439477196237
```

```
import os
cpu_percent = psutil.cpu_percent()
process = psutil.Process(os.getpid())
mem_info = process.memory_info()
memory_mb = mem_info.rss / 1024 / 1024
cpu_percent,memory_mb
```

[34] ✓ 0.0s

```
(5.4, 696.6640625)
```

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

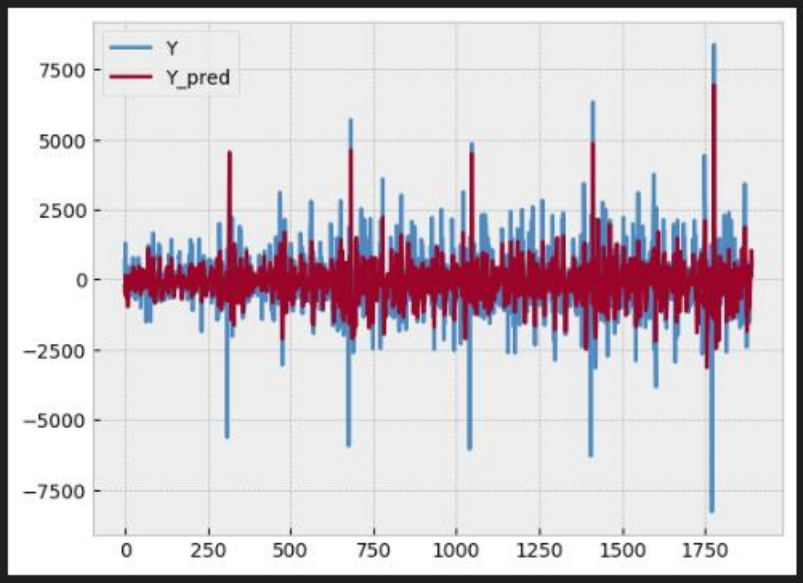
LSTM HOUSEHOLD

```
cpu_percent,memory_mb
```

✓ 282m 10.2s

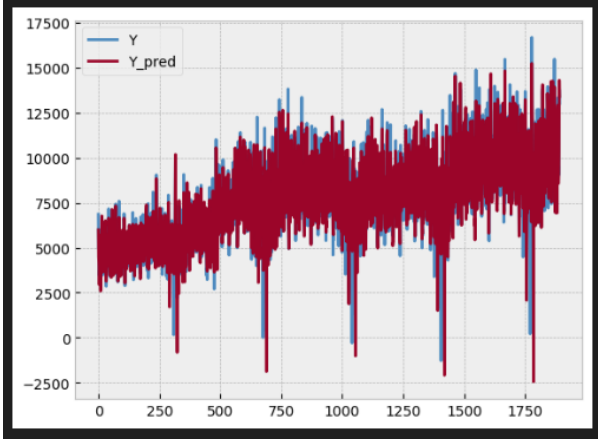
```
  [ 9321]
  [11721]
  [12323]
  [ 8585]
  [ 8835]
  [ 8239]
  [ 8363]
  [ 9728]]]
[2029.6625]
[[[12885]
  [ 9620]
  [ 8261]
  [ 7748]
  [ 8287]
  [ 9321]
  [11721]
  [12323]
  [ 8585]
  [ 8835]
  [ 8239]
  [ 8363]
  [ 9728]
  [12248]]]
[2743.9705]
 > 6617.308
> Model[(14, 20, 5, 18, 128, 0, 'Adagrad', 0.001, 'uniform', 'relu')] 7245.751
done
(14, 50, 5, 18, 128, 7, 'Adagrad', 0.1, 'normal', 'softplus') 414.1971929365269
(7, 50, 5, 18, 128, 7, 'Adamax', 0.1, 'normal', 'linear') 438.41480298329384
(7, 50, 5, 18, 500, 7, 'Adamax', 0.001, 'normal', 'linear') 440.17786871135513

(2.0, 986.1875)
```

```
[77]  ✓ 1.2s
...   CAT
      1
      (1892, 14, 1) (1892, 1)
      60/60 [==============================] - 0s 952us/step
      805.1861386066844
```




```
#train_fy+train_f.shift(7).dropna().reset_index(drop=True).loc[7:]
datos_plot=datos_predf.copy()
```

```
#train_fy+train_f.shift(7).dropna().reset_index(drop=True).loc[7:]
datos_plot=datos_predf.copy()
datos_plot["Y"]=datos_predf["Y"]+train_f.shift(7).dropna().reset_index(drop=True).loc[7:].reset_index(drop=True)["CAT"]
datos_plot["Y_pred"]=datos_predf["Y_pred"]+train_f.shift(7).dropna().reset_index(drop=True).loc[7:].reset_index(drop=True)["CAT"]
# train_f.shift(7).dropna().reset_index(drop=True).loc[7:].reset_index(drop=True)["CAT"]
#.plot()
datos_plot.plot()
# print(rmse(datos_plot["Y"],datos_plot["Y_pred"]))
✓ 0.1s
<Axes: >
```




0.12

```
] ✓ 282m 10.2s

Total configs: 466
CAT
1
(1892, 7, 1) (1892, 1)
WARNING:tensorflow:Layer lstm_22 will not use cuDNN kernels since it doe
...
[[[ -562.]
  [-1035.]
  [  574.]
  [  491.]
  [   76.]
  [  407.]
  [  527.]]]
```

LSTM HOBBIES

```
    memory_mb = mem_info.rss / 1024 / 1024
    cpu_percent,memory_mb

[81] ✓ 129m 46.6s

... [[[-280.]
     [-105.]
     [ 295.]
     [-393.]
     [ 403.]
     [ -85.]
     [-433.]]]
    [3719.0896]
    [[[-105.]
     [ 295.]
     [-393.]
     [ 403.]
     [ -85.]
     [-433.]
     [ 299.]]]
    [4626.0884]
    [[[ 295.]
     [-393.]
     [ 403.]
     [ -85.]
     [-433.]
     [ 299.]
     [ 153.]]]
    [4795.668]
     > 326.006
    > Model[(7, 100, 3, 18, 128, 7, 'Adagrad', 0.1, 'normal', 'relu')] 314.592
    done
    (7, 100, 5, 18, 32, 0, 'Adagrad', 0.001, 'uniform', 'relu') 241.28899104535424
    (7, 100, 5, 18, 128, 0, 'Adagrad', 0.001, 'normal', 'relu') 248.75203962044873
    (7, 100, 5, 18, 32, 7, 'Adamax', 0.1, 'normal', 'relu') 289.60747044288456

... (2.5, 1086.92578125)

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  JUPYTER
```

```
scores#[3][0]
```

✓ 0.0s

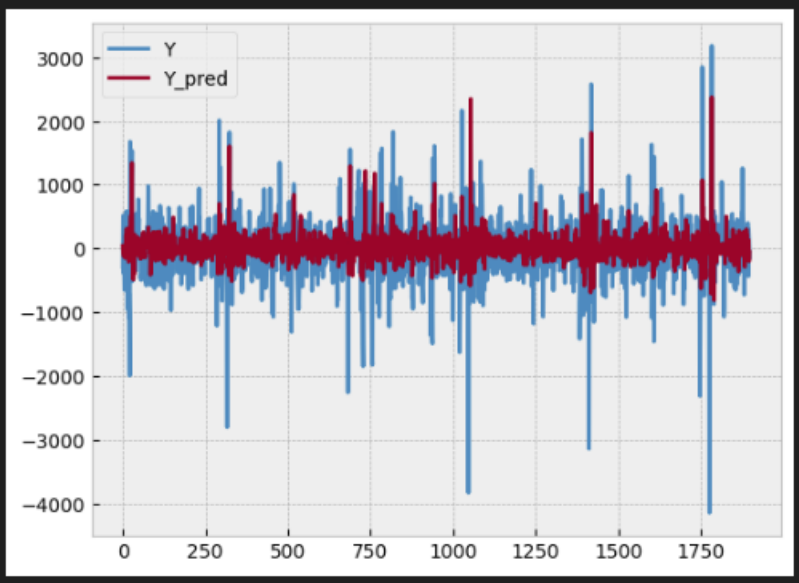
```
[((7, 100, 5, 18, 32, 0, 'Adagrad', 0.001, 'uniform', 'relu'),
  241.28899104535424),
 ((7, 100, 5, 18, 128, 0, 'Adagrad', 0.001, 'normal', 'relu'),
  248.75203962044873),
 ((7, 100, 5, 18, 32, 7, 'Adamax', 0.1, 'normal', 'relu'), 289.60747044288456),
 ((7, 100, 5, 18, 128, 7, 'adam', 0.1, 'normal', 'softplus'),
  303.07792151345325),
 ((7, 100, 3, 18, 500, 7, 'adam', 0.1, 'normal', 'softplus'),
  303.0857690699451),
 ((14, 100, 3, 18, 500, 7, 'adam', 0.1, 'lecun_uniform', 'relu'),
  303.0970351499284),
 ((7, 50, 3, 18, 32, 7, 'adam', 0.1, 'uniform', 'softplus'),
  303.12708512109754),
 ((7, 50, 3, 18, 128, 7, 'adam', 0.1, 'normal', 'relu'), 303.17468539040476),
 ((14, 20, 5, 18, 128, 7, 'adam', 0.1, 'normal', 'relu'), 303.2339193103788),
 ((7, 20, 3, 18, 500, 7, 'adam', 0.1, 'lecun_uniform', 'relu'),
  303.56004800887104),
 ((14, 20, 5, 18, 32, 7, 'adam', 0.1, 'normal', 'relu'), 306.3902206428538),
 ((14, 20, 3, 18, 128, 7, 'Adagrad', 0.001, 'uniform', 'relu'),
  309.8705305095226),
 ((7, 20, 3, 18, 500, 7, 'Adagrad', 0.001, 'uniform', 'linear'),
  310.45489145163947),
 ((7, 20, 3, 18, 32, 7, 'adam', 0.001, 'uniform', 'softplus'),
  312.6080316800957),
 ((7, 100, 3, 18, 128, 7, 'Adagrad', 0.1, 'normal', 'relu'),
...
 ((7, 100, 5, 18, 32, 7, 'adam', 0.1, 'uniform', 'linear'), 10000000000.0),
 ((14, 20, 5, 18, 32, 0, 'adam', 0.1, 'uniform', 'linear'), 10000000000.0),
 ((14, 100, 3, 18, 128, 0, 'adam', 0.1, 'lecun_uniform', 'relu'),
  10000000000.0),
 ((7, 100, 5, 18, 32, 7, 'adam', 0.1, 'normal', 'linear'), 10000000000.0)]
```

*Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...*

```
[[[3557]
  [3786]
  [3786]
```

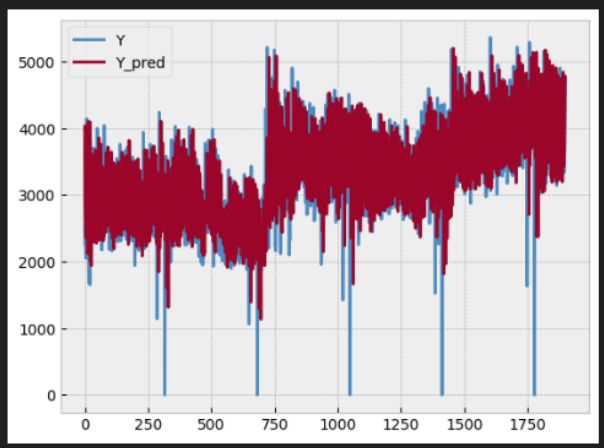
```
...  (2.5, 1086.92578125)
```

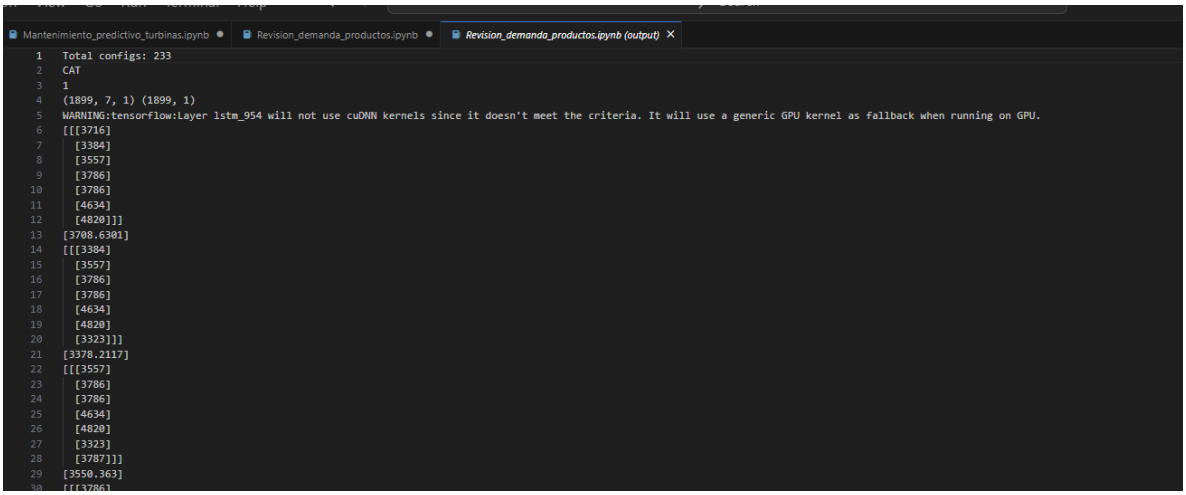
```
[103]  ✓ 3.5s

...  CAT
     1
     (1899, 7, 1) (1899, 1)
     60/60 [==============================] - 0s 1ms/step
     420.1784030217218
```



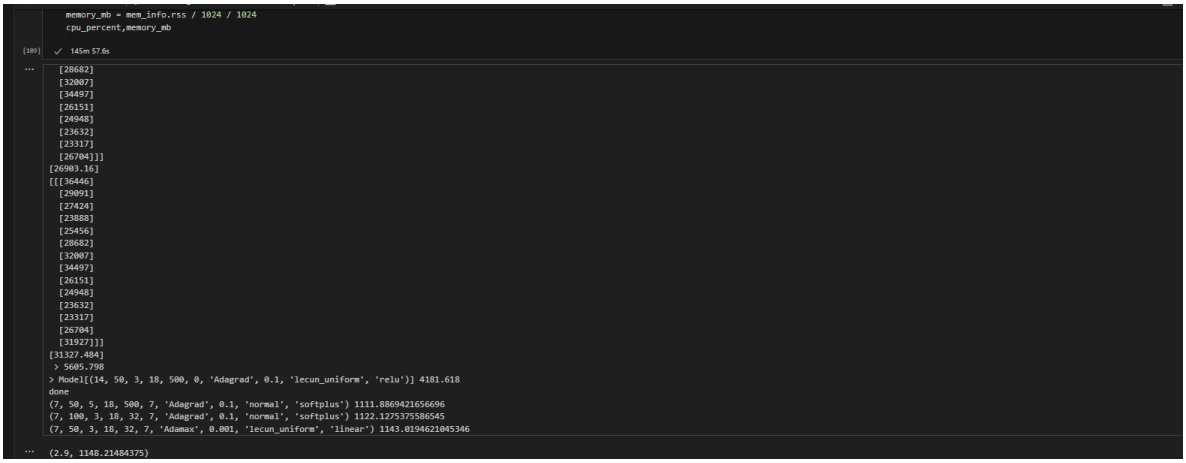

```
#train_fy+train_f.shift(7).dropna().reset_index(drop=True).loc[7:]
datos_plot=datos_predf.copy()
datos_plot["Y"]=datos_predf["Y"]+train_f.shift(7).dropna().reset_index(drop=True).loc[7:].reset_index(drop=True)["CAT"]
datos_plot["Y_pred"]=datos_predf["Y_pred"]+train_f.shift(7).dropna().reset_index(drop=True).loc[7:].reset_index(drop=True)["CAT"]
# datos_plot["Y"]=datos_predf["Y"]+train_f.shift(7).dropna().reset_index(drop=True).loc[7:].reset_index(drop=True)["CAT"]
# datos_plot["Y_pred"]=datos_predf["Y_pred"]+train_f.shift(7).dropna().reset_index(drop=True).loc[7:].reset_index(drop=True)["CAT"]


# train_f.shift(7).dropna().reset_index(drop=True).loc[7:].reset_index(drop=True)["CAT"]
#.plot()
datos_plot.plot()
# print(rmse(datos_plot["Y"],datos_plot["Y_pred"]))
```

```
4]  ✓ 0.1s

<Axes: >
```




Mantenimiento_predictivo_turbinas.ipynb
Revision_demanda_productos.ipynb
Revision_demanda_productos.ipynb (output)
Total configs: 233
CAT
1
(1899, 7, 1) (1899, 1)
WARNING:tensorflow:Layer lstm_954 will not use cuDNN kernels since it doesn't meet the criteria. It will use a generic GPU kernel as fallback when running on GPU.
[[[3716]
[3384]
[3557]
[3786]
[3786]
[4634]
[4820]]]
[3708.6301]
[[[3384]
[3557]
[3786]
[3786]
[4634]
[4820]
[3323]]]
[3378.2117]
[[[3557]
[3786]
[3786]
[4634]
[4820]
[3323]
[3787]]]
[3550.363]

LSTM FOOD


memory_mb = mem_info.rss / 1024 / 1024
cpu_percent,memory_mb
[189] ✓ 145m 57.6s
[28682]
[32007]
[34497]
[26151]
[24948]
[23632]
[23317]
[26704]]]
[26903.16]
[[[36446]
[29091]
[27424]
[23888]
[25456]
[28682]
[32007]
[34497]
[26151]
[24948]
[23632]
[23317]
[26704]
[31927]]]
[31327.484]
> 5605.798
> Model[(14, 50, 3, 18, 500, 0, 'Adagrad', 0.1, 'lecun_uniform', 'relu')] 4181.618
done
(7, 50, 5, 18, 500, 7, 'Adagrad', 0.1, 'normal', 'softplus') 1111.8869421656696
(7, 100, 3, 18, 32, 7, 'Adagrad', 0.1, 'normal', 'softplus') 1122.1275375586545
(7, 50, 3, 18, 32, 7, 'Adamax', 0.001, 'lecun_uniform', 'linear') 1143.019462104534
(2.9, 1148.21484375)

```
# pd.DataFrame(scores,columns=["conf","score"]).to_csv("LSTM_HOBBIES.csv")
scores#[3][0]
```

[117] ✓ 0.0s

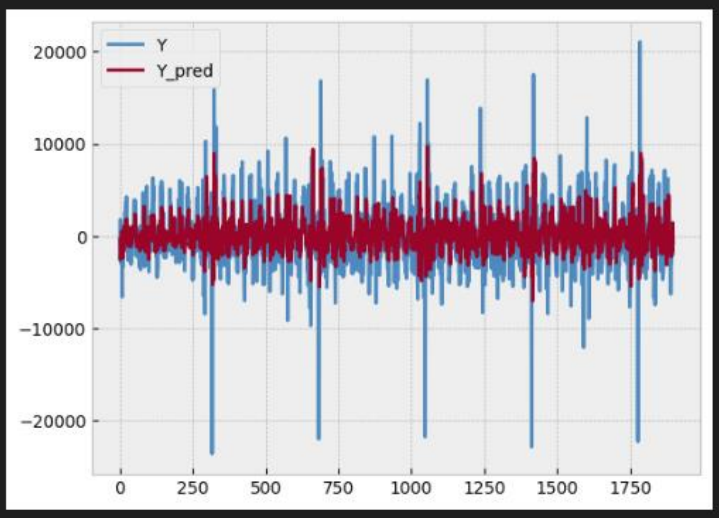
```
[((7, 50, 5, 18, 500, 7, 'Adagrad', 0.1, 'normal', 'softplus'),
  1111.8869421656696),
 ((7, 100, 3, 18, 32, 7, 'Adagrad', 0.1, 'normal', 'softplus'),
  1122.1275375586545),
 ((7, 50, 3, 18, 32, 7, 'Adamax', 0.001, 'lecun_uniform', 'linear'),
  1143.0194621045346),
 ((14, 100, 5, 18, 128, 7, 'Adamax', 0.001, 'lecun_uniform', 'linear'),
  1157.168177006132),
 ((7, 100, 5, 18, 32, 7, 'adam', 0.001, 'uniform', 'linear'),
  1160.3685858114309),
 ((7, 50, 3, 18, 32, 7, 'Adagrad', 0.1, 'normal', 'relu'), 1167.4894714286102),
 ((7, 50, 3, 18, 32, 7, 'Adagrad', 0.1, 'uniform', 'relu'),
  1194.6595083366888),
 ((7, 100, 3, 18, 128, 7, 'adam', 0.001, 'lecun_uniform', 'softplus'),
  1199.5596423422605),
 ((7, 100, 5, 18, 32, 7, 'Adagrad', 0.001, 'lecun_uniform', 'softplus'),
  1207.7821110903114),
 ((7, 20, 3, 18, 500, 7, 'Adagrad', 0.1, 'lecun_uniform', 'relu'),
  1229.2208702950425),
 ((14, 50, 5, 18, 500, 7, 'adam', 0.001, 'lecun_uniform', 'linear'),
  1230.928727584732),
 ((14, 50, 5, 18, 32, 7, 'Adagrad', 0.001, 'lecun_uniform', 'softplus'),
  1249.6410879455482),
 ((7, 100, 3, 18, 128, 7, 'Adagrad', 0.1, 'normal', 'softplus'),
  1252.5904454205433),
...
  10000000000.0),
 ((14, 100, 5, 18, 128, 7, 'adam', 0.1, 'uniform', 'linear'), 10000000000.0),
 ((7, 50, 5, 18, 128, 7, 'adam', 0.1, 'lecun_uniform', 'linear'),
  10000000000.0),
 ((7, 100, 5, 18, 32, 7, 'adam', 0.1, 'normal', 'linear'), 10000000000.0)]
```

*Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...*

```
print(rmse(datos_predf["Y"],datos_predf["Y_pred"]))
```

[110] ✓ 3.0s

```
CAT
1
(1899, 7, 1) (1899, 1)
60/60 [==============================] - 0s 917us/step
3051.6456300700825
```

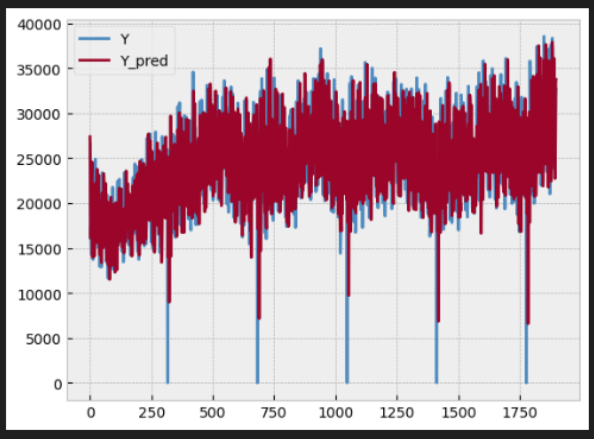



```
#train_fy+train_f.shift(7).dropna().reset_index(drop=True).loc[7:]
```

```
# datos_plot["Y"]=datos_predf["Y"]+train_f.shift(7).dropna().reset_index(drop=True).loc[7:].reset_index(drop=True)["CAT"]
# datos_plot["Y_pred"]=datos_predf["Y_pred"]+train_f.shift(7).dropna().reset_index(drop=True).loc[7:].reset_index(drop=True)["

# train_f.shift(7).dropna().reset_index(drop=True).loc[7:].reset_index(drop=True)["CAT"]
#.plot()
datos_plot.plot()
print(rmse(datos_plot[datos_plot["Y"]>10000]["Y"],datos_plot[datos_plot["Y"]>10000]["Y_pred"]))
```

[116] ✓ 0.1s

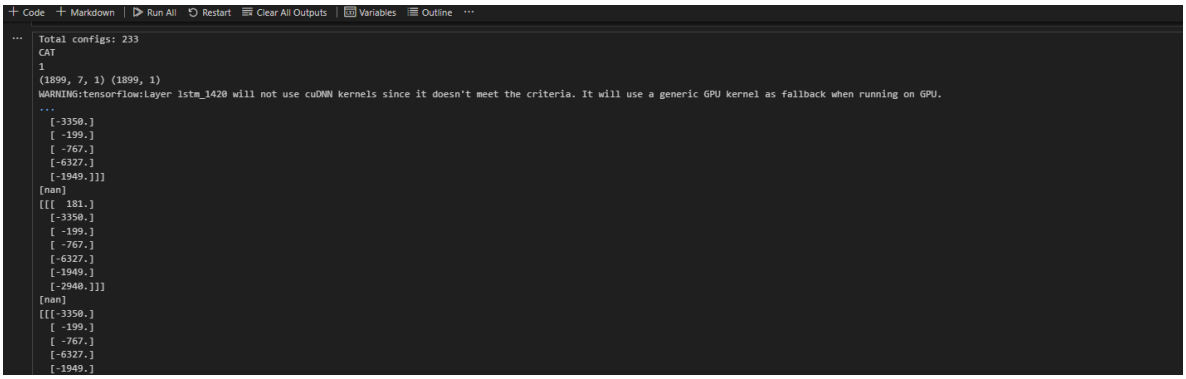
```
2829.6152732718765
```




```
datos_plot#[datos_plot["Y"]>100000]
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPYTER

```
coment2\lib\site-packages (from scikit-learn) (1.26.1)
```


Code
Markdown
Run All
Restart
Clear All Outputs
Variables
Outline
Total configs: 233
CAT
1
(1899, 7, 1) (1899, 1)
WARNING:tensorflow:Layer lstm_1420 will not use cuDNN kernels since it doesn't meet the criteria. It will use a generic GPU kernel as fallback when running on GPU.
...
[-3350.]
[ -199.]
[ -767.]
[-6327.]
[-1949.]]]
[nan]
[[[ 181.]
[-3350.]
[ -199.]
[ -767.]
[-6327.]
[-1949.]
[-2940.]]]
[nan]
[[[-3350.]
[ -199.]
[ -767.]
[-6327.]
[-1949.]