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1 "C:\Users\asied\OneDrive\Documents\Coding Related Things\Garch Volatility  
Forecasting\venv\Scripts\python.exe" "C:/Users/asied/OneDrive/Documents/  
Coding Related Things/Garch Volatility Forecasting/SandP500LSTM.py"  
2 Epoch 1/500  
3 30/30 [=====] - 2s 11ms/step - loss: 9302703.  
0000 - mean_absolute_error: 2867.2280 - val_loss: 239250.5156 -  
val_mean_absolute_error: 457.7546  
4 Epoch 2/500  
5 30/30 [=====] - 0s 2ms/step - loss: 1073038.2500  
- mean_absolute_error: 830.4178 - val_loss: 167478.7344 -  
val_mean_absolute_error: 371.2539  
6 Epoch 3/500  
7 30/30 [=====] - 0s 2ms/step - loss: 768246.8750  
- mean_absolute_error: 710.6649 - val_loss: 110558.5625 -  
val_mean_absolute_error: 289.6190  
8 Epoch 4/500  
9 30/30 [=====] - 0s 2ms/step - loss: 701237.5625  
- mean_absolute_error: 672.0920 - val_loss: 134378.5312 -  
val_mean_absolute_error: 261.5333  
10 Epoch 5/500  
11 30/30 [=====] - 0s 2ms/step - loss: 325517.1250  
- mean_absolute_error: 455.9228 - val_loss: 453385.8750 -  
val_mean_absolute_error: 572.7609
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12 Epoch 6/500
13 30/30 [=====] - 0s 2ms/step - loss: 293976.9375
    - mean_absolute_error: 427.9424 - val_loss: 432773.5938 -
    val_mean_absolute_error: 567.6352
14 Epoch 7/500
15 30/30 [=====] - 0s 2ms/step - loss: 297843.5625
    - mean_absolute_error: 424.1723 - val_loss: 389343.2188 -
    val_mean_absolute_error: 548.2246
16 Epoch 8/500
17 30/30 [=====] - 0s 2ms/step - loss: 248991.3281
    - mean_absolute_error: 387.2306 - val_loss: 477343.9062 -
    val_mean_absolute_error: 575.1077
18 Epoch 9/500
19 30/30 [=====] - 0s 2ms/step - loss: 261181.3906
    - mean_absolute_error: 394.8785 - val_loss: 416417.1875 -
    val_mean_absolute_error: 574.9150
20 Epoch 10/500
21 30/30 [=====] - 0s 2ms/step - loss: 227684.9219
    - mean_absolute_error: 371.8237 - val_loss: 482248.4375 -
    val_mean_absolute_error: 618.9432
22 Epoch 11/500
23 30/30 [=====] - 0s 2ms/step - loss: 173817.1094
    - mean_absolute_error: 320.2798 - val_loss: 438252.5938 -
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23 val_mean_absolute_error: 576.0975
24 Epoch 12/500
25 30/30 [=====] - 0s 2ms/step - loss: 145702.0625
- mean_absolute_error: 300.5201 - val_loss: 497238.5625 -
val_mean_absolute_error: 632.5801
26 Epoch 13/500
27 30/30 [=====] - 0s 2ms/step - Loss: 133246.2031
- mean_absolute_error: 275.3438 - val_loss: 445338.8750 -
val_mean_absolute_error: 577.2570
28 Epoch 14/500
29 30/30 [=====] - 0s 2ms/step - loss: 116745.3906
- mean_absolute_error: 254.3443 - val_loss: 277916.1562 -
val_mean_absolute_error: 450.9193
30 Epoch 15/500
31 30/30 [=====] - 0s 2ms/step - loss: 101990.0703
- mean_absolute_error: 242.5672 - val_loss: 405885.8438 -
val_mean_absolute_error: 559.1226
32 Epoch 16/500
33 30/30 [=====] - 0s 2ms/step - loss: 77636.2578
- mean_absolute_error: 207.3109 - val_loss: 339437.9688 -
val_mean_absolute_error: 498.3148
34 Epoch 17/500
35 30/30 [=====] - 0s 2ms/step - loss: 68107.0156
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35  - mean_absolute_error: 196.2934 - val_loss: 317554.8125 -
    val_mean_absolute_error: 484.2483
36  Epoch 18/500
37  30/30 [=====] - 0s 2ms/step - loss: 66194.2578
    - mean_absolute_error: 184.6636 - val_loss: 303262.1250 -
    val_mean_absolute_error: 478.0679
38  Epoch 19/500
39  30/30 [=====] - 0s 2ms/step - loss: 57519.0391
    - mean_absolute_error: 174.5710 - val_loss: 310018.2500 -
    val_mean_absolute_error: 475.7731
40  Epoch 20/500
41  30/30 [=====] - 0s 2ms/step - loss: 57058.6875
    - mean_absolute_error: 172.3594 - val_loss: 327125.4375 -
    val_mean_absolute_error: 488.8700
42  Epoch 21/500
43  30/30 [=====] - 0s 2ms/step - loss: 55254.9219
    - mean_absolute_error: 173.3365 - val_loss: 345796.9688 -
    val_mean_absolute_error: 510.6365
44  Epoch 22/500
45  30/30 [=====] - 0s 2ms/step - loss: 59005.5391
    - mean_absolute_error: 178.8119 - val_loss: 344993.2188 -
    val_mean_absolute_error: 508.2198
46  Epoch 23/500
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47 30/30 [=====] - 0s 2ms/step - loss: 54222.2383
  - mean_absolute_error: 174.6514 - val_loss: 393989.4375 -
    val_mean_absolute_error: 541.4490
48 Epoch 24/500
49 30/30 [=====] - 0s 2ms/step - loss: 68355.0078
  - mean_absolute_error: 190.2135 - val_loss: 441627.4062 -
    val_mean_absolute_error: 582.1747
50 Epoch 25/500
51 30/30 [=====] - 0s 2ms/step - loss: 57257.8633
  - mean_absolute_error: 167.8491 - val_loss: 406088.3750 -
    val_mean_absolute_error: 552.6892
52 Epoch 26/500
53 30/30 [=====] - 0s 2ms/step - loss: 54839.6289
  - mean_absolute_error: 174.8385 - val_loss: 407353.8750 -
    val_mean_absolute_error: 547.0726
54 Epoch 27/500
55 30/30 [=====] - 0s 2ms/step - loss: 53586.8281
  - mean_absolute_error: 168.7600 - val_loss: 297118.6562 -
    val_mean_absolute_error: 458.7465
56 Epoch 28/500
57 30/30 [=====] - 0s 2ms/step - loss: 51426.1328
  - mean_absolute_error: 170.1376 - val_loss: 404560.7500 -
    val_mean_absolute_error: 552.7216
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58 Epoch 29/500
59 30/30 [=====] - 0s 2ms/step - loss: 57635.9023
    - mean_absolute_error: 175.8971 - val_loss: 353575.3438 -
    val_mean_absolute_error: 512.0761
60 Epoch 30/500
61 30/30 [=====] - 0s 2ms/step - loss: 51873.1758
    - mean_absolute_error: 164.9848 - val_loss: 287361.8438 -
    val_mean_absolute_error: 452.2993
62 Epoch 31/500
63 30/30 [=====] - 0s 2ms/step - loss: 59599.7656
    - mean_absolute_error: 177.3360 - val_loss: 343818.8750 -
    val_mean_absolute_error: 497.4367
64 Epoch 32/500
65 30/30 [=====] - 0s 2ms/step - loss: 49510.2812
    - mean_absolute_error: 166.5159 - val_loss: 308888.3750 -
    val_mean_absolute_error: 467.2138
66 Epoch 33/500
67 30/30 [=====] - 0s 2ms/step - loss: 46399.8984
    - mean_absolute_error: 156.1053 - val_loss: 323510.6875 -
    val_mean_absolute_error: 476.3459
68 Epoch 34/500
69 30/30 [=====] - 0s 2ms/step - loss: 50708.0938
    - mean_absolute_error: 167.9951 - val_loss: 405923.3125 -
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69 val_mean_absolute_error: 550.7349
70 Epoch 35/500
71 30/30 [=====] - 0s 2ms/step - loss: 50563.2188
- mean_absolute_error: 171.5190 - val_loss: 314912.0000 -
val_mean_absolute_error: 473.6586
72 Epoch 36/500
73 30/30 [=====] - 0s 2ms/step - loss: 50890.9141
- mean_absolute_error: 166.1594 - val_loss: 373909.1875 -
val_mean_absolute_error: 528.7740
74 Epoch 37/500
75 30/30 [=====] - 0s 2ms/step - loss: 43455.6211
- mean_absolute_error: 154.1999 - val_loss: 325812.3125 -
val_mean_absolute_error: 474.7563
76 Epoch 38/500
77 30/30 [=====] - 0s 2ms/step - loss: 48994.5820
- mean_absolute_error: 159.3220 - val_loss: 310827.4062 -
val_mean_absolute_error: 468.1677
78 Epoch 39/500
79 30/30 [=====] - 0s 2ms/step - loss: 56918.5898
- mean_absolute_error: 176.2948 - val_loss: 464191.0312 -
val_mean_absolute_error: 590.1412
80 Epoch 40/500
81 30/30 [=====] - 0s 2ms/step - loss: 60732.9219
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81 - mean_absolute_error: 181.5167 - val_loss: 321140.3125 -
val_mean_absolute_error: 473.6950
82 Epoch 41/500
83 30/30 [=====] - 0s 2ms/step - Loss: 46345.1328
- mean_absolute_error: 159.5279 - val_loss: 404259.3438 -
val_mean_absolute_error: 540.0228
84 Epoch 42/500
85 30/30 [=====] - 0s 2ms/step - Loss: 450002.2930
- mean_absolute_error: 159.3703 - val_loss: 375533.1250 -
val_mean_absolute_error: 516.4672
86 Epoch 43/500
87 30/30 [=====] - 0s 2ms/step - Loss: 46264.3281
- mean_absolute_error: 158.0268 - val_loss: 371764.7188 -
val_mean_absolute_error: 519.2039
88 Epoch 44/500
89 30/30 [=====] - 0s 2ms/step - Loss: 47343.1172
- mean_absolute_error: 165.1506 - val_loss: 402176.9688 -
val_mean_absolute_error: 540.4214
90 Epoch 45/500
91 30/30 [=====] - 0s 2ms/step - Loss: 51485.1406
- mean_absolute_error: 169.8470 - val_loss: 437681.1562 -
val_mean_absolute_error: 565.8298
92 Epoch 46/500
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93 30/30 [=====] - 0s 2ms/step - loss: 45692.1641
- mean_absolute_error: 160.6057 - val_loss: 350903.7812 -
val_mean_absolute_error: 503.3615
94 Epoch 47/500
95 30/30 [=====] - 0s 2ms/step - loss: 51737.3008
- mean_absolute_error: 165.2813 - val_loss: 358718.8438 -
val_mean_absolute_error: 503.8654
96 Epoch 48/500
97 30/30 [=====] - 0s 2ms/step - loss: 50908.3438
- mean_absolute_error: 169.6557 - val_loss: 454110.4375 -
val_mean_absolute_error: 579.7622
98 Epoch 49/500
99 30/30 [=====] - 0s 2ms/step - loss: 51314.2695
- mean_absolute_error: 174.1025 - val_loss: 481319.1250 -
val_mean_absolute_error: 592.4774
100 Epoch 50/500
101 30/30 [=====] - 0s 2ms/step - loss: 53435.9648
- mean_absolute_error: 175.8832 - val_loss: 299477.4688 -
val_mean_absolute_error: 456.6204
102 Epoch 51/500
103 30/30 [=====] - 0s 2ms/step - loss: 57958.8320
- mean_absolute_error: 177.8418 - val_loss: 409998.0938 -
val_mean_absolute_error: 544.8757
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104 Epoch 52/500
105 30/30 [=====] - 0s 2ms/step - loss: 46463.5938
    - mean_absolute_error: 160.4345 - val_loss: 403628.9688 -
    val_mean_absolute_error: 547.3886
106 Epoch 53/500
107 30/30 [=====] - 0s 2ms/step - loss: 463333.9062
    - mean_absolute_error: 159.6160 - val_loss: 338871.9375 -
    val_mean_absolute_error: 488.9159
108 Epoch 54/500
109 30/30 [=====] - 0s 2ms/step - loss: 473339.0469
    - mean_absolute_error: 161.8504 - val_loss: 417139.7812 -
    val_mean_absolute_error: 547.9179
110 Epoch 55/500
111 30/30 [=====] - 0s 2ms/step - loss: 48646.7773
    - mean_absolute_error: 164.8122 - val_loss: 324852.6562 -
    val_mean_absolute_error: 481.8689
112 Epoch 56/500
113 30/30 [=====] - 0s 2ms/step - loss: 53885.3711
    - mean_absolute_error: 177.0596 - val_loss: 375400.3438 -
    val_mean_absolute_error: 522.5006
114 Epoch 57/500
115 30/30 [=====] - 0s 3ms/step - loss: 49093.1484
    - mean_absolute_error: 166.8217 - val_loss: 276073.1562 -
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115 val_mean_absolute_error: 437.1452
116 Epoch 58/500
117 30/30 [=====] - 0s 2ms/step - Loss: 51080.4961
    - mean_absolute_error: 168.7105 - val_loss: 344378.5625 -
    val_mean_absolute_error: 486.2835
118 Epoch 59/500
119 30/30 [=====] - 0s 2ms/step - Loss: 42022.3555
    - mean_absolute_error: 155.9396 - val_loss: 334745.8125 -
    val_mean_absolute_error: 491.0029
120 Epoch 60/500
121 30/30 [=====] - 0s 2ms/step - Loss: 54695.3672
    - mean_absolute_error: 173.2609 - val_loss: 336715.8438 -
    val_mean_absolute_error: 480.0184
122 Epoch 61/500
123 30/30 [=====] - 0s 2ms/step - Loss: 41587.2539
    - mean_absolute_error: 154.0283 - val_loss: 343932.0938 -
    val_mean_absolute_error: 497.6869
124 Epoch 62/500
125 30/30 [=====] - 0s 2ms/step - Loss: 47957.6094
    - mean_absolute_error: 164.7635 - val_loss: 356748.8125 -
    val_mean_absolute_error: 495.5111
126 Epoch 63/500
127 30/30 [=====] - 0s 2ms/step - Loss: 51084.1758
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127  - mean_absolute_error: 171.1714 - val_loss: 438329.7812 -
      val_mean_absolute_error: 570.9306
128 Epoch 64/500
129 30/30 [=====] - 0s 2ms/step - Loss: 47749.2266
      - mean_absolute_error: 167.9837 - val_loss: 364588.7812 -
      val_mean_absolute_error: 508.1619
130 Epoch 65/500
131 30/30 [=====] - 0s 2ms/step - Loss: 44189.8203
      - mean_absolute_error: 155.2042 - val_loss: 351936.2188 -
      val_mean_absolute_error: 496.1913
132 Epoch 66/500
133 30/30 [=====] - 0s 2ms/step - Loss: 47664.0039
      - mean_absolute_error: 162.0417 - val_loss: 369517.4062 -
      val_mean_absolute_error: 511.7121
134 Epoch 67/500
135 30/30 [=====] - 0s 2ms/step - Loss: 48040.7656
      - mean_absolute_error: 165.4960 - val_loss: 451349.9375 -
      val_mean_absolute_error: 581.3652
136 Epoch 68/500
137 30/30 [=====] - 0s 2ms/step - Loss: 46241.4180
      - mean_absolute_error: 162.0767 - val_loss: 373351.7500 -
      val_mean_absolute_error: 520.1235
138 Epoch 69/500
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139 30/30 [=====] - 0s 2ms/step - loss: 44931.1445
  - mean_absolute_error: 163.0467 - val_loss: 384725.0625 -
  val_mean_absolute_error: 522.8902

140 Epoch 70/500
141 30/30 [=====] - 0s 2ms/step - loss: 45081.7109
  - mean_absolute_error: 158.0883 - val_loss: 368825.4062 -
  val_mean_absolute_error: 512.8400

142 Epoch 71/500
143 30/30 [=====] - 0s 2ms/step - loss: 43576.4492
  - mean_absolute_error: 159.9661 - val_loss: 340351.8438 -
  val_mean_absolute_error: 491.0506

144 Epoch 72/500
145 30/30 [=====] - 0s 2ms/step - loss: 43814.5547
  - mean_absolute_error: 159.8984 - val_loss: 383597.7188 -
  val_mean_absolute_error: 517.7391

146 Epoch 73/500
147 30/30 [=====] - 0s 2ms/step - loss: 44680.6328
  - mean_absolute_error: 160.5119 - val_loss: 363345.0000 -
  val_mean_absolute_error: 501.8884

148 Epoch 74/500
149 30/30 [=====] - 0s 2ms/step - loss: 42272.0430
  - mean_absolute_error: 155.3038 - val_loss: 469575.1875 -
  val_mean_absolute_error: 592.3282
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150 Epoch 75/500
151 30/30 [=====] - 0s 2ms/step - loss: 48104.9297
    - mean_absolute_error: 163.3746 - val_loss: 402906.6875 -
    val_mean_absolute_error: 546.2431
152 Epoch 76/500
153 30/30 [=====] - 0s 2ms/step - loss: 49385.3203
    - mean_absolute_error: 164.8071 - val_loss: 379447.4062 -
    val_mean_absolute_error: 523.8603
154 Epoch 77/500
155 30/30 [=====] - 0s 2ms/step - loss: 42390.8633
    - mean_absolute_error: 154.1567 - val_loss: 334215.1250 -
    val_mean_absolute_error: 484.0865
156 Epoch 78/500
157 30/30 [=====] - 0s 2ms/step - loss: 45155.8203
    - mean_absolute_error: 161.1392 - val_loss: 270354.2812 -
    val_mean_absolute_error: 433.6959
158 Epoch 79/500
159 30/30 [=====] - 0s 2ms/step - loss: 45483.3125
    - mean_absolute_error: 165.8990 - val_loss: 373289.9062 -
    val_mean_absolute_error: 508.0579
160 Epoch 80/500
161 30/30 [=====] - 0s 2ms/step - loss: 49437.8711
    - mean_absolute_error: 168.5845 - val_loss: 365198.8438 -
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161 val_mean_absolute_error: 500.3531
162 Epoch 81/500
163 30/30 [=====] - 0s 2ms/step - Loss: 44196.6445
    - mean_absolute_error: 157.8285 - val_loss: 547174.3125 -
    val_mean_absolute_error: 647.4686
164 Epoch 82/500
165 30/30 [=====] - 0s 2ms/step - Loss: 47542.6641
    - mean_absolute_error: 167.8874 - val_loss: 379629.9375 -
    val_mean_absolute_error: 523.8440
166 Epoch 83/500
167 30/30 [=====] - 0s 2ms/step - Loss: 45400.0469
    - mean_absolute_error: 159.0777 - val_loss: 310372.6875 -
    val_mean_absolute_error: 472.8184
168 Epoch 84/500
169 30/30 [=====] - 0s 2ms/step - Loss: 52717.6016
    - mean_absolute_error: 174.3582 - val_loss: 519822.2500 -
    val_mean_absolute_error: 622.2079
170 Epoch 85/500
171 30/30 [=====] - 0s 2ms/step - Loss: 58375.3320
    - mean_absolute_error: 181.3743 - val_loss: 273386.1875 -
    val_mean_absolute_error: 419.8555
172 Epoch 86/500
173 30/30 [=====] - 0s 2ms/step - Loss: 47313.0039
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173  - mean_absolute_error: 161.4354 - val_loss: 363289.3125 -
    val_mean_absolute_error: 510.7466
174 Epoch 87/500
175 30/30 [=====] - 0s 2ms/step - Loss: 54741.2812
    - mean_absolute_error: 178.3665 - val_loss: 347511.5312 -
    val_mean_absolute_error: 496.0301
176 Epoch 88/500
177 30/30 [=====] - 0s 2ms/step - Loss: 46222.1875
    - mean_absolute_error: 164.9383 - val_loss: 368698.5938 -
    val_mean_absolute_error: 510.9144
178 Epoch 89/500
179 30/30 [=====] - 0s 2ms/step - Loss: 45778.5195
    - mean_absolute_error: 158.7353 - val_loss: 346567.7188 -
    val_mean_absolute_error: 495.6497
180 Epoch 90/500
181 30/30 [=====] - 0s 2ms/step - Loss: 43174.6797
    - mean_absolute_error: 157.9354 - val_loss: 316835.6875 -
    val_mean_absolute_error: 471.5220
182 Epoch 91/500
183 30/30 [=====] - 0s 2ms/step - Loss: 49768.6875
    - mean_absolute_error: 165.2898 - val_loss: 461921.9062 -
    val_mean_absolute_error: 582.8744
184 Epoch 92/500
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185	30 / 30	[=====] - 0s 2ms/step - loss: 45084.1445
	- mean_absolute_error: 156.8289 - val_loss: 394420.3750 -	
	val_mean_absolute_error: 536.4030	
186	Epoch 93 / 500	
187	30 / 30	[=====] - 0s 4ms/step - loss: 49351.3945
	- mean_absolute_error: 163.1336 - val_loss: 421172.0938 -	
	val_mean_absolute_error: 544.2695	
188	Epoch 94 / 500	
189	30 / 30	[=====] - 0s 2ms/step - loss: 44656.4102
	- mean_absolute_error: 156.9441 - val_loss: 512791.5938 -	
	val_mean_absolute_error: 619.8110	
190	Epoch 95 / 500	
191	30 / 30	[=====] - 0s 2ms/step - loss: 44128.6523
	- mean_absolute_error: 178.4796 - val_loss: 392695.9375 -	
	val_mean_absolute_error: 529.6077	
192	Epoch 96 / 500	
193	30 / 30	[=====] - 0s 2ms/step - loss: 44128.6523
	- mean_absolute_error: 155.8358 - val_loss: 365483.5312 -	
	val_mean_absolute_error: 509.2495	
194	Epoch 97 / 500	
195	30 / 30	[=====] - 0s 2ms/step - loss: 49507.1562
	- mean_absolute_error: 166.8594 - val_loss: 473078.4062 -	
	val_mean_absolute_error: 587.1003	

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196 Epoch 98/500
197 30/30 [=====] - 0s 2ms/step - loss: 490085.2266
    - mean_absolute_error: 165.4010 - val_loss: 344977.1250 -
    val_mean_absolute_error: 500.8380
198 Epoch 99/500
199 30/30 [=====] - 0s 2ms/step - loss: 47658.5391
    - mean_absolute_error: 164.1051 - val_loss: 345844.9375 -
    val_mean_absolute_error: 489.6394
200 Epoch 100/500
201 30/30 [=====] - 0s 2ms/step - loss: 490091.6836
    - mean_absolute_error: 167.9525 - val_loss: 357827.0312 -
    val_mean_absolute_error: 504.1878
202 Epoch 101/500
203 30/30 [=====] - 0s 2ms/step - loss: 44811.2656
    - mean_absolute_error: 159.0068 - val_loss: 343532.7812 -
    val_mean_absolute_error: 494.0858
204 Epoch 102/500
205 30/30 [=====] - 0s 2ms/step - loss: 48214.4023
    - mean_absolute_error: 169.3336 - val_loss: 344013.0938 -
    val_mean_absolute_error: 482.8296
206 Epoch 103/500
207 30/30 [=====] - 0s 2ms/step - loss: 48100.1484
    - mean_absolute_error: 167.8507 - val_loss: 311376.3750 -
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207 val_mean_absolute_error: 472.6308
208 Epoch 104/500
209 30/30 [=====] - 0s 2ms/step - Loss: 50397.8281
    - mean_absolute_error: 168.8669 - val_loss: 452013.7500 -
    val_mean_absolute_error: 578.5197
210 Epoch 105/500
211 30/30 [=====] - 0s 2ms/step - Loss: 54277.1836
    - mean_absolute_error: 171.2793 - val_loss: 327482.8438 -
    val_mean_absolute_error: 484.7408
212 Epoch 106/500
213 30/30 [=====] - 0s 2ms/step - Loss: 50404.4453
    - mean_absolute_error: 170.6206 - val_loss: 413087.1250 -
    val_mean_absolute_error: 546.4064
214 Epoch 107/500
215 30/30 [=====] - 0s 2ms/step - Loss: 49126.0742
    - mean_absolute_error: 167.5531 - val_loss: 416557.0938 -
    val_mean_absolute_error: 546.9644
216 Epoch 108/500
217 30/30 [=====] - 0s 2ms/step - Loss: 45544.3359
    - mean_absolute_error: 155.2127 - val_loss: 375904.0625 -
    val_mean_absolute_error: 521.6033
218 Epoch 109/500
219 30/30 [=====] - 0s 2ms/step - Loss: 42613.4570
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219  - mean_absolute_error: 157.0598 - val_loss: 307875.0625 -
    val_mean_absolute_error: 463.0536
220 Epoch 110/500
221 30/30 [=====] - 0s 2ms/step - Loss: 49014.0781
    - mean_absolute_error: 166.7778 - val_loss: 408368.6875 -
    val_mean_absolute_error: 536.5275
222 Epoch 111/500
223 30/30 [=====] - 0s 2ms/step - Loss: 46724.8477
    - mean_absolute_error: 161.5209 - val_loss: 412634.1562 -
    val_mean_absolute_error: 547.4858
224 Epoch 112/500
225 30/30 [=====] - 0s 2ms/step - Loss: 46663.3711
    - mean_absolute_error: 158.8264 - val_loss: 301383.9688 -
    val_mean_absolute_error: 463.6104
226 Epoch 113/500
227 30/30 [=====] - 0s 2ms/step - Loss: 48012.3633
    - mean_absolute_error: 167.1749 - val_loss: 335258.8750 -
    val_mean_absolute_error: 481.5405
228 Epoch 114/500
229 30/30 [=====] - 0s 2ms/step - Loss: 47566.7617
    - mean_absolute_error: 164.8853 - val_loss: 385840.4062 -
    val_mean_absolute_error: 520.4219
230 Epoch 115/500
```

```
231 30/30 [=====] - 0s 2ms/step - loss: 45225.4922
  - mean_absolute_error: 161.0631 - val_loss: 269197.9688 -
  val_mean_absolute_error: 432.5869
232 Epoch 116/500
233 30/30 [=====] - 0s 2ms/step - loss: 47949.2656
  - mean_absolute_error: 162.4631 - val_loss: 408725.1250 -
  val_mean_absolute_error: 545.1372
234 Epoch 117/500
235 30/30 [=====] - 0s 2ms/step - loss: 45619.9648
  - mean_absolute_error: 159.4539 - val_loss: 406918.9062 -
  val_mean_absolute_error: 533.0880
236 Epoch 118/500
237 30/30 [=====] - 0s 2ms/step - loss: 47978.7383
  - mean_absolute_error: 166.5112 - val_loss: 337221.7812 -
  val_mean_absolute_error: 478.3767
238 Epoch 119/500
239 30/30 [=====] - 0s 2ms/step - loss: 49798.6250
  - mean_absolute_error: 164.5140 - val_loss: 371076.6562 -
  val_mean_absolute_error: 521.1234
240 Epoch 120/500
241 30/30 [=====] - 0s 2ms/step - loss: 46957.5273
  - mean_absolute_error: 161.2312 - val_loss: 349858.6562 -
  val_mean_absolute_error: 497.2117
```

```
242 Epoch 121/500
243 30/30 [=====] - 0s 2ms/step - loss: 43626.1445
    - mean_absolute_error: 158.3975 - val_loss: 350416.0938 -
    val_mean_absolute_error: 499.6694
244 Epoch 122/500
245 30/30 [=====] - 0s 2ms/step - loss: 48178.9727
    - mean_absolute_error: 162.6449 - val_loss: 408616.2188 -
    val_mean_absolute_error: 536.5449
246 Epoch 123/500
247 30/30 [=====] - 0s 2ms/step - loss: 52714.9844
    - mean_absolute_error: 169.7503 - val_loss: 443425.9375 -
    val_mean_absolute_error: 557.6276
248 Epoch 124/500
249 30/30 [=====] - 0s 2ms/step - loss: 44862.5703
    - mean_absolute_error: 156.1931 - val_loss: 354375.8438 -
    val_mean_absolute_error: 504.1581
250 Epoch 125/500
251 30/30 [=====] - 0s 2ms/step - loss: 42917.2891
    - mean_absolute_error: 154.9342 - val_loss: 316081.5312 -
    val_mean_absolute_error: 475.6502
252 Epoch 126/500
253 30/30 [=====] - 0s 2ms/step - loss: 47107.4062
    - mean_absolute_error: 160.0851 - val_loss: 379540.4688 -
```

```
253 val_mean_absolute_error: 520.0605
254 Epoch 127/500
255 30/30 [=====] - 0s 2ms/step - Loss: 45188.5352
    - mean_absolute_error: 162.4426 - val_loss: 414561.7500 -
        val_mean_absolute_error: 548.5351
256 Epoch 128/500
257 30/30 [=====] - 0s 2ms/step - Loss: 45447.3203
    - mean_absolute_error: 162.9434 - val_loss: 448492.8438 -
        val_mean_absolute_error: 562.7615
258 Epoch 129/500
259 30/30 [=====] - 0s 2ms/step - Loss: 58893.8945
    - mean_absolute_error: 182.6426 - val_loss: 432566.5000 -
        val_mean_absolute_error: 565.3849
260 Epoch 130/500
261 30/30 [=====] - 0s 2ms/step - Loss: 44063.9102
    - mean_absolute_error: 158.4701 - val_loss: 317494.8125 -
        val_mean_absolute_error: 466.6513
262 Epoch 131/500
263 30/30 [=====] - 0s 2ms/step - Loss: 44641.7227
    - mean_absolute_error: 158.0261 - val_loss: 378409.8750 -
        val_mean_absolute_error: 530.7805
264 Epoch 132/500
265 30/30 [=====] - 0s 2ms/step - Loss: 46463.9453
```

```
265  - mean_absolute_error: 164.8747 - val_loss: 439607.3750 -
    val_mean_absolute_error: 564.8863
266  Epoch 133/500
267  30/30 [=====] - 0s 2ms/step - Loss: 49456.8164
    - mean_absolute_error: 171.2239 - val_loss: 360948.4062 -
    val_mean_absolute_error: 516.9610
268  Epoch 134/500
269  30/30 [=====] - 0s 2ms/step - Loss: 42799.5195
    - mean_absolute_error: 162.6912 - val_loss: 203688.6562 -
    val_mean_absolute_error: 377.8178
270  Epoch 135/500
271  30/30 [=====] - 0s 2ms/step - Loss: 49851.7617
    - mean_absolute_error: 169.6417 - val_loss: 410828.2812 -
    val_mean_absolute_error: 544.1119
272  Epoch 136/500
273  30/30 [=====] - 0s 2ms/step - Loss: 52303.6641
    - mean_absolute_error: 171.8367 - val_loss: 342202.6562 -
    val_mean_absolute_error: 496.8477
274  Epoch 137/500
275  30/30 [=====] - 0s 2ms/step - Loss: 46391.4375
    - mean_absolute_error: 163.6116 - val_loss: 415049.4062 -
    val_mean_absolute_error: 538.0883
276  Epoch 138/500
```

```
277 30/30 [=====] - 0s 3ms/step - loss: 51690.8164
    - mean_absolute_error: 164.5624 - val_loss: 399416.5938 -
    val_mean_absolute_error: 532.5156
278 Epoch 139/500
279 30/30 [=====] - 0s 2ms/step - loss: 50734.9102
    - mean_absolute_error: 168.1168 - val_loss: 319278.0312 -
    val_mean_absolute_error: 474.9669
280 Epoch 140/500
281 30/30 [=====] - 0s 2ms/step - loss: 47802.5195
    - mean_absolute_error: 165.5054 - val_loss: 298441.5625 -
    val_mean_absolute_error: 447.6888
282 Epoch 141/500
283 30/30 [=====] - 0s 2ms/step - loss: 51849.3711
    - mean_absolute_error: 171.4104 - val_loss: 389335.2500 -
    val_mean_absolute_error: 528.7797
284 Epoch 142/500
285 30/30 [=====] - 0s 2ms/step - loss: 52354.2930
    - mean_absolute_error: 170.5705 - val_loss: 403507.0625 -
    val_mean_absolute_error: 540.1525
286 Epoch 143/500
287 30/30 [=====] - 0s 2ms/step - loss: 50517.9297
    - mean_absolute_error: 165.7677 - val_loss: 493859.3125 -
    val_mean_absolute_error: 611.3969
```

```
288 Epoch 144/500
289 30/30 [=====] - 0s 2ms/step - loss: 47994.1719
    - mean_absolute_error: 169.4261 - val_loss: 490615.9688 -
    val_mean_absolute_error: 603.3390
290 Epoch 145/500
291 30/30 [=====] - 0s 2ms/step - loss: 50392.8438
    - mean_absolute_error: 167.2228 - val_loss: 278333.2500 -
    val_mean_absolute_error: 432.7968
292 Epoch 146/500
293 30/30 [=====] - 0s 2ms/step - loss: 44467.4883
    - mean_absolute_error: 156.5009 - val_loss: 415196.0625 -
    val_mean_absolute_error: 552.6473
294 Epoch 147/500
295 30/30 [=====] - 0s 2ms/step - loss: 45962.6367
    - mean_absolute_error: 158.8206 - val_loss: 310725.0000 -
    val_mean_absolute_error: 461.1617
296 Epoch 148/500
297 30/30 [=====] - 0s 2ms/step - loss: 47178.0312
    - mean_absolute_error: 161.3287 - val_loss: 336814.3125 -
    val_mean_absolute_error: 473.3470
298 Epoch 149/500
299 30/30 [=====] - 0s 2ms/step - loss: 50833.3203
    - mean_absolute_error: 167.5314 - val_loss: 379082.3438 -
```

```
299 val_mean_absolute_error: 520.0022
300 Epoch 150/500
301 30/30 [=====] - 0s 2ms/step - Loss: 50797.2891
    - mean_absolute_error: 173.0659 - val_loss: 384251.1875 -
        val_mean_absolute_error: 509.4889
302 Epoch 151/500
303 30/30 [=====] - 0s 2ms/step - Loss: 56972.1406
    - mean_absolute_error: 181.1634 - val_loss: 493950.8438 -
        val_mean_absolute_error: 596.5017
304 Epoch 152/500
305 30/30 [=====] - 0s 2ms/step - Loss: 45082.4141
    - mean_absolute_error: 156.4863 - val_loss: 422245.7500 -
        val_mean_absolute_error: 565.4153
306 Epoch 153/500
307 30/30 [=====] - 0s 2ms/step - Loss: 42031.7461
    - mean_absolute_error: 159.7776 - val_loss: 405097.3750 -
        val_mean_absolute_error: 528.4318
308 Epoch 154/500
309 30/30 [=====] - 0s 2ms/step - Loss: 47589.4375
    - mean_absolute_error: 159.8496 - val_loss: 400849.5312 -
        val_mean_absolute_error: 547.2083
310 Epoch 155/500
311 30/30 [=====] - 0s 2ms/step - Loss: 49706.4492
```

```
311 - mean_absolute_error: 173.6344 - val_loss: 381304.3750 -
      val_mean_absolute_error: 521.8732
312 Epoch 156/500
313 30/30 [=====] - 0s 2ms/step - Loss: 50653.0273
      - mean_absolute_error: 171.1549 - val_loss: 336428.0000 -
      val_mean_absolute_error: 480.0512
314 Epoch 157/500
315 30/30 [=====] - 0s 2ms/step - Loss: 53017.1875
      - mean_absolute_error: 177.0206 - val_loss: 340921.3438 -
      val_mean_absolute_error: 490.7859
316 Epoch 158/500
317 30/30 [=====] - 0s 2ms/step - Loss: 48552.2344
      - mean_absolute_error: 162.3798 - val_loss: 271255.6875 -
      val_mean_absolute_error: 442.0330
318 Epoch 159/500
319 30/30 [=====] - 0s 2ms/step - Loss: 48030.6406
      - mean_absolute_error: 163.7213 - val_loss: 471641.1875 -
      val_mean_absolute_error: 591.9827
320 Epoch 160/500
321 30/30 [=====] - 0s 2ms/step - Loss: 47670.3945
      - mean_absolute_error: 161.4991 - val_loss: 335850.6562 -
      val_mean_absolute_error: 487.5525
322 Epoch 161/500
```

```
323 30/30 [=====] - 0s 2ms/step - loss: 43196.6680
  - mean_absolute_error: 152.7738 - val_loss: 393662.1250 -
    val_mean_absolute_error: 532.1402

324 Epoch 162/500
325 30/30 [=====] - 0s 2ms/step - loss: 45847.3047
  - mean_absolute_error: 158.4273 - val_loss: 307208.0312 -
    val_mean_absolute_error: 458.0087

326 Epoch 163/500
327 30/30 [=====] - 0s 2ms/step - loss: 50093.4414
  - mean_absolute_error: 168.7315 - val_loss: 295865.1562 -
    val_mean_absolute_error: 451.6815

328 Epoch 164/500
329 30/30 [=====] - 0s 2ms/step - loss: 43413.8203
  - mean_absolute_error: 158.6080 - val_loss: 298541.7812 -
    val_mean_absolute_error: 454.3571

330 Epoch 165/500
331 30/30 [=====] - 0s 2ms/step - loss: 53242.3633
  - mean_absolute_error: 175.4187 - val_loss: 329032.1250 -
    val_mean_absolute_error: 484.4168

332 Epoch 166/500
333 30/30 [=====] - 0s 2ms/step - loss: 41720.8984
  - mean_absolute_error: 156.0776 - val_loss: 452746.0625 -
    val_mean_absolute_error: 587.1458
```

```
334 Epoch 167/500
335 30/30 [=====] - 0s 2ms/step - loss: 48973.6250
    - mean_absolute_error: 166.6760 - val_loss: 350708.0625 -
        val_mean_absolute_error: 499.5010

336 Epoch 168/500
337 30/30 [=====] - 0s 2ms/step - loss: 44945.6836
    - mean_absolute_error: 158.3481 - val_loss: 329048.0625 -
        val_mean_absolute_error: 482.2679

338 Epoch 169/500
339 30/30 [=====] - 0s 3ms/step - loss: 490089.7188
    - mean_absolute_error: 171.5530 - val_loss: 384415.9062 -
        val_mean_absolute_error: 519.9774

340 Epoch 170/500
341 30/30 [=====] - 0s 2ms/step - loss: 44345.3242
    - mean_absolute_error: 152.3793 - val_loss: 307538.8750 -
        val_mean_absolute_error: 465.4603

342 Epoch 171/500
343 30/30 [=====] - 0s 2ms/step - loss: 51496.3438
    - mean_absolute_error: 173.5252 - val_loss: 378892.6562 -
        val_mean_absolute_error: 516.3563

344 Epoch 172/500
345 30/30 [=====] - 0s 2ms/step - loss: 44227.7578
    - mean_absolute_error: 160.3776 - val_loss: 287162.0938 -
```

```
345 val_mean_absolute_error: 441.4537
346 Epoch 173/500
347 30/30 [=====] - 0s 2ms/step - loss: 50181.8008
    - mean_absolute_error: 168.6711 - val_loss: 378304.0625 -
        val_mean_absolute_error: 523.7541
348 Epoch 174/500
349 30/30 [=====] - 0s 2ms/step - loss: 49755.8242
    - mean_absolute_error: 173.9438 - val_loss: 351096.0938 -
        val_mean_absolute_error: 499.7694
350 Epoch 175/500
351 30/30 [=====] - 0s 2ms/step - loss: 50547.0703
    - mean_absolute_error: 169.2327 - val_loss: 398775.0000 -
        val_mean_absolute_error: 529.9474
352 Epoch 176/500
353 30/30 [=====] - 0s 2ms/step - loss: 516634.6562 -
    - mean_absolute_error: 181.7487 - val_loss: 516634.6562 -
        val_mean_absolute_error: 601.2444
354 Epoch 177/500
355 30/30 [=====] - 0s 2ms/step - loss: 50611.3945
    - mean_absolute_error: 168.7551 - val_loss: 383836.4062 -
        val_mean_absolute_error: 526.3779
356 Epoch 178/500
357 30/30 [=====] - 0s 2ms/step - loss: 51355.6641
```

```
357  - mean_absolute_error: 171.8798 - val_loss: 318399.9688 -
    val_mean_absolute_error: 475.9172
358 Epoch 179/500
359 30/30 [=====] - 0s 2ms/step - Loss: 46201.7188
    - mean_absolute_error: 161.2612 - val_loss: 382477.7812 -
    val_mean_absolute_error: 524.0851
360 Epoch 180/500
361 30/30 [=====] - 0s 2ms/step - Loss: 49527.2461
    - mean_absolute_error: 168.6677 - val_loss: 336262.6250 -
    val_mean_absolute_error: 487.6675
362 Epoch 181/500
363 30/30 [=====] - 0s 2ms/step - Loss: 42739.2656
    - mean_absolute_error: 152.8733 - val_loss: 335580.4688 -
    val_mean_absolute_error: 478.2858
364 Epoch 182/500
365 30/30 [=====] - 0s 2ms/step - Loss: 41012.8672
    - mean_absolute_error: 154.1864 - val_loss: 382850.5938 -
    val_mean_absolute_error: 521.3240
366 Epoch 183/500
367 30/30 [=====] - 0s 2ms/step - Loss: 43266.4297
    - mean_absolute_error: 155.7393 - val_loss: 320929.5312 -
    val_mean_absolute_error: 474.6821
368 Epoch 184/500
```

```
369 30/30 [=====] - 0s 2ms/step - loss: 43536.4219
  - mean_absolute_error: 154.1615 - val_loss: 529744.4375 -
  val_mean_absolute_error: 638.5807

370 Epoch 185/500
371 30/30 [=====] - 0s 2ms/step - loss: 57679.2188
  - mean_absolute_error: 182.0290 - val_loss: 498413.8438 -
  val_mean_absolute_error: 605.9271

372 Epoch 186/500
373 30/30 [=====] - 0s 2ms/step - loss: 47918.8477
  - mean_absolute_error: 170.2741 - val_loss: 347842.8438 -
  val_mean_absolute_error: 488.6853

374 Epoch 187/500
375 30/30 [=====] - 0s 2ms/step - loss: 48227.7422
  - mean_absolute_error: 161.1369 - val_loss: 405140.7812 -
  val_mean_absolute_error: 538.9763

376 Epoch 188/500
377 30/30 [=====] - 0s 2ms/step - loss: 47515.0078
  - mean_absolute_error: 164.2282 - val_loss: 435363.9062 -
  val_mean_absolute_error: 568.4827

378 Epoch 189/500
379 30/30 [=====] - 0s 2ms/step - loss: 49423.5156
  - mean_absolute_error: 164.3404 - val_loss: 394565.3438 -
  val_mean_absolute_error: 523.2256
```

```
380 Epoch 190/500
381 30/30 [=====] - 0s 2ms/step - loss: 47865.1719
      - mean_absolute_error: 163.9847 - val_loss: 332419.7188 -
      val_mean_absolute_error: 479.9299
382 Epoch 191/500
383 30/30 [=====] - 0s 2ms/step - loss: 46827.1250
      - mean_absolute_error: 163.9865 - val_loss: 384867.5312 -
      val_mean_absolute_error: 523.0269
384 Epoch 192/500
385 30/30 [=====] - 0s 2ms/step - loss: 51197.4609
      - mean_absolute_error: 163.1388 - val_loss: 516081.6562 -
      val_mean_absolute_error: 637.3430
386 Epoch 193/500
387 30/30 [=====] - 0s 2ms/step - loss: 49538.9648
      - mean_absolute_error: 168.4806 - val_loss: 447191.2188 -
      val_mean_absolute_error: 565.9057
388 Epoch 194/500
389 30/30 [=====] - 0s 2ms/step - loss: 51121.5352
      - mean_absolute_error: 167.6463 - val_loss: 447335.9375 -
      val_mean_absolute_error: 574.1285
390 Epoch 195/500
391 30/30 [=====] - 0s 2ms/step - loss: 48240.2422
      - mean_absolute_error: 167.5089 - val_loss: 319775.7500 -
      val_mean_absolute_error: 574.1285
```

```
391 val_mean_absolute_error: 471.5855
392 Epoch 196/500
393 30/30 [=====] - 0s 2ms/step - Loss: 45437.8633
- mean_absolute_error: 160.6418 - val_loss: 361069.0312 -
val_mean_absolute_error: 506.9055
394 Epoch 197/500
395 30/30 [=====] - 0s 2ms/step - Loss: 47775.9414
- mean_absolute_error: 166.4427 - val_loss: 379014.0938 -
val_mean_absolute_error: 531.6687
396 Epoch 198/500
397 30/30 [=====] - 0s 2ms/step - Loss: 44300.8320
- mean_absolute_error: 159.7361 - val_loss: 319094.1562 -
val_mean_absolute_error: 475.2779
398 Epoch 199/500
399 30/30 [=====] - 0s 2ms/step - Loss: 46779.9453
- mean_absolute_error: 159.6474 - val_loss: 360959.5000 -
val_mean_absolute_error: 501.5318
400 Epoch 200/500
401 30/30 [=====] - 0s 2ms/step - Loss: 44888.1914
- mean_absolute_error: 161.4144 - val_loss: 309795.1250 -
val_mean_absolute_error: 460.5367
402 Epoch 201/500
403 30/30 [=====] - 0s 2ms/step - Loss: 44278.0547
```

```
403 - mean_absolute_error: 156.8336 - val_loss: 303253.3750 -
    val_mean_absolute_error: 461.7132
404 Epoch 202/500
405 30/30 [=====] - 0s 2ms/step - Loss: 53011.3164
    - mean_absolute_error: 178.0442 - val_loss: 360948.5625 -
    val_mean_absolute_error: 499.5215
406 Epoch 203/500
407 30/30 [=====] - 0s 2ms/step - Loss: 43757.6250
    - mean_absolute_error: 160.2558 - val_loss: 338070.1875 -
    val_mean_absolute_error: 489.9876
408 Epoch 204/500
409 30/30 [=====] - 0s 2ms/step - Loss: 49261.3203
    - mean_absolute_error: 163.8748 - val_loss: 351924.3438 -
    val_mean_absolute_error: 502.9164
410 Epoch 205/500
411 30/30 [=====] - 0s 2ms/step - Loss: 43931.2734
    - mean_absolute_error: 162.4101 - val_loss: 394792.0312 -
    val_mean_absolute_error: 536.1493
412 Epoch 206/500
413 30/30 [=====] - 0s 2ms/step - Loss: 44039.5195
    - mean_absolute_error: 156.7563 - val_loss: 373988.5625 -
    val_mean_absolute_error: 519.9514
414 Epoch 207/500
```

```
415 30/30 [=====] - 0s 2ms/step - loss: 43564.8477
  - mean_absolute_error: 159.4384 - val_loss: 395835.6250 -
    val_mean_absolute_error: 531.1119
416 Epoch 208/500
417 30/30 [=====] - 0s 2ms/step - loss: 450007.1211
  - mean_absolute_error: 156.6173 - val_loss: 380871.0000 -
    val_mean_absolute_error: 510.9801
418 Epoch 209/500
419 30/30 [=====] - 0s 2ms/step - loss: 51236.1914
  - mean_absolute_error: 169.3438 - val_loss: 400831.6875 -
    val_mean_absolute_error: 536.4675
420 Epoch 210/500
421 30/30 [=====] - 0s 2ms/step - loss: 46604.5781
  - mean_absolute_error: 163.2574 - val_loss: 426136.6250 -
    val_mean_absolute_error: 552.3472
422 Epoch 211/500
423 30/30 [=====] - 0s 2ms/step - loss: 50757.3945
  - mean_absolute_error: 168.5443 - val_loss: 393145.4688 -
    val_mean_absolute_error: 532.8282
424 Epoch 212/500
425 30/30 [=====] - 0s 2ms/step - loss: 50503.0547
  - mean_absolute_error: 170.2968 - val_loss: 351703.0312 -
    val_mean_absolute_error: 494.5021
```

```
426 Epoch 213/500
427 30/30 [=====] - 0s 2ms/step - loss: 56697.9180
    - mean_absolute_error: 179.1982 - val_loss: 391312.5000 -
        val_mean_absolute_error: 522.7261
    - mean_absolute_error: 158.8584 - val_loss: 43065.2305
        val_mean_absolute_error: 564.7607
428 Epoch 214/500
429 30/30 [=====] - 0s 2ms/step - loss: 43065.2305
    - mean_absolute_error: 163.4011 - val_loss: 44893.0508
        val_mean_absolute_error: 529.3066
    - mean_absolute_error: 161.4101 - val_loss: 351967.3750 -
        val_mean_absolute_error: 529.3063
430 Epoch 215/500
431 30/30 [=====] - 0s 2ms/step - loss: 48143.9844
    - mean_absolute_error: 163.4011 - val_loss: 395710.5625 -
        val_mean_absolute_error: 529.3066
    - mean_absolute_error: 157.1911 - val_loss: 311590.1875 -
        val_mean_absolute_error: 460.4162
432 Epoch 216/500
433 30/30 [=====] - 0s 2ms/step - loss: 43814.0820
    - mean_absolute_error: 171.1471 - val_loss: 49960.9570
        val_mean_absolute_error: 463629.1875 -
    - mean_absolute_error: 171.1471 - val_loss: 463629.1875 -
```

```
437 val_mean_absolute_error: 576.2110
438 Epoch 219/500
439 30/30 [=====] - 0s 2ms/step - Loss: 53407.1992
    - mean_absolute_error: 173.6588 - val_loss: 300088.0938 -
        val_mean_absolute_error: 458.0180
440 Epoch 220/500
441 30/30 [=====] - 0s 4ms/step - Loss: 50981.7109
    - mean_absolute_error: 169.9099 - val_loss: 379802.1562 -
        val_mean_absolute_error: 521.1280
442 Epoch 221/500
443 30/30 [=====] - 0s 2ms/step - Loss: 44713.7266
    - mean_absolute_error: 159.0863 - val_loss: 394898.4688 -
        val_mean_absolute_error: 534.9349
444 Epoch 222/500
445 30/30 [=====] - 0s 2ms/step - Loss: 44549.6367
    - mean_absolute_error: 162.8901 - val_loss: 347374.1875 -
        val_mean_absolute_error: 486.6299
446 Epoch 223/500
447 30/30 [=====] - 0s 2ms/step - Loss: 50095.0781
    - mean_absolute_error: 169.4785 - val_loss: 345702.6562 -
        val_mean_absolute_error: 494.2929
448 Epoch 224/500
449 30/30 [=====] - 0s 2ms/step - Loss: 48136.5586
```

```
449 - mean_absolute_error: 166.3138 - val_loss: 607653.6250 -
    val_mean_absolute_error: 697.3365
450 Epoch 225/500
451 30/30 [=====] - 0s 2ms/step - Loss: 68056.6328
    - mean_absolute_error: 199.6599 - val_loss: 411999.6875 -
    val_mean_absolute_error: 544.5476
452 Epoch 226/500
453 30/30 [=====] - 0s 2ms/step - Loss: 50283.1875
    - mean_absolute_error: 165.7744 - val_loss: 424241.6875 -
    val_mean_absolute_error: 559.9930
454 Epoch 227/500
455 30/30 [=====] - 0s 2ms/step - Loss: 44314.9648
    - mean_absolute_error: 162.6917 - val_loss: 368089.7500 -
    val_mean_absolute_error: 505.2231
456 Epoch 228/500
457 30/30 [=====] - 0s 2ms/step - Loss: 43252.4492
    - mean_absolute_error: 155.9615 - val_loss: 334739.5625 -
    val_mean_absolute_error: 484.5314
458 Epoch 229/500
459 30/30 [=====] - 0s 2ms/step - Loss: 44509.6250
    - mean_absolute_error: 157.5139 - val_loss: 441378.0938 -
    val_mean_absolute_error: 565.3389
460 Epoch 230/500
```

```
461 30/30 [=====] - 0s 2ms/step - loss: 51010.5469
  - mean_absolute_error: 171.1904 - val_loss: 257230.5000 -
    val_mean_absolute_error: 424.0347
462 Epoch 231/500
463 30/30 [=====] - 0s 2ms/step - loss: 51795.8281
  - mean_absolute_error: 180.8082 - val_loss: 465909.0625 -
    val_mean_absolute_error: 566.2982
464 Epoch 232/500
465 30/30 [=====] - 0s 2ms/step - loss: 42850.5039
  - mean_absolute_error: 155.6830 - val_loss: 305607.4062 -
    val_mean_absolute_error: 460.4028
466 Epoch 233/500
467 30/30 [=====] - 0s 2ms/step - loss: 44095.3359
  - mean_absolute_error: 160.8335 - val_loss: 350467.9688 -
    val_mean_absolute_error: 501.3053
468 Epoch 234/500
469 30/30 [=====] - 0s 2ms/step - loss: 46206.4258
  - mean_absolute_error: 159.8075 - val_loss: 336414.5000 -
    val_mean_absolute_error: 486.8365
470 Epoch 235/500
471 30/30 [=====] - 0s 2ms/step - loss: 45977.7109
  - mean_absolute_error: 164.9267 - val_loss: 348968.0938 -
    val_mean_absolute_error: 493.9875
```

```
472 Epoch 236/500
473 30/30 [=====] - 0s 2ms/step - loss: 56984.5508
    - mean_absolute_error: 177.6411 - val_loss: 465979.1562 -
        val_mean_absolute_error: 591.4494
474 Epoch 237/500
475 30/30 [=====] - 0s 2ms/step - loss: 45235.1758
    - mean_absolute_error: 162.7104 - val_loss: 339556.0312 -
        val_mean_absolute_error: 485.9014
476 Epoch 238/500
477 30/30 [=====] - 0s 2ms/step - loss: 42705.3164
    - mean_absolute_error: 163.0234 - val_loss: 299630.2812 -
        val_mean_absolute_error: 460.3180
478 Epoch 239/500
479 30/30 [=====] - 0s 2ms/step - loss: 45735.4570
    - mean_absolute_error: 164.4386 - val_loss: 313364.0000 -
        val_mean_absolute_error: 472.6161
480 Epoch 240/500
481 30/30 [=====] - 0s 2ms/step - loss: 46422.7539
    - mean_absolute_error: 162.7868 - val_loss: 436031.6250 -
        val_mean_absolute_error: 556.5795
482 Epoch 241/500
483 30/30 [=====] - 0s 2ms/step - loss: 46374.1328
    - mean_absolute_error: 164.1699 - val_loss: 341306.6250 -
```

```
483 val_mean_absolute_error: 488.0398
484 Epoch 242/500
485 30/30 [=====] - 0s 2ms/step - Loss: 43351.5938
- mean_absolute_error: 158.1286 - val_loss: 365433.1562 -
val_mean_absolute_error: 507.3108
486 Epoch 243/500
487 30/30 [=====] - 0s 2ms/step - Loss: 50736.0508
- mean_absolute_error: 171.3292 - val_loss: 385163.2500 -
val_mean_absolute_error: 523.5411
488 Epoch 244/500
489 30/30 [=====] - 0s 2ms/step - Loss: 45974.7383
- mean_absolute_error: 158.9534 - val_loss: 287624.9375 -
val_mean_absolute_error: 445.0084
490 Epoch 245/500
491 30/30 [=====] - 0s 2ms/step - Loss: 46662.4180
- mean_absolute_error: 167.4026 - val_loss: 386418.1250 -
val_mean_absolute_error: 521.7927
492 Epoch 246/500
493 30/30 [=====] - 0s 2ms/step - Loss: 44290.6328
- mean_absolute_error: 158.7503 - val_loss: 371286.8125 -
val_mean_absolute_error: 516.9044
494 Epoch 247/500
495 30/30 [=====] - 0s 2ms/step - Loss: 42103.4062
```

```
495  - mean_absolute_error: 158.0391 - val_loss: 378957.6562 -
    val_mean_absolute_error: 509.2725
496 Epoch 248/500
497 30/30 [=====] - 0s 2ms/step - Loss: 46513.3438
    - mean_absolute_error: 161.8999 - val_loss: 319596.0312 -
    val_mean_absolute_error: 472.0181
498 Epoch 249/500
499 30/30 [=====] - 0s 2ms/step - Loss: 45863.1250
    - mean_absolute_error: 162.1340 - val_loss: 302041.6562 -
    val_mean_absolute_error: 458.8180
500 Epoch 250/500
501 30/30 [=====] - 0s 2ms/step - Loss: 45061.5000
    - mean_absolute_error: 157.7633 - val_loss: 336989.1875 -
    val_mean_absolute_error: 481.3629
502 Epoch 251/500
503 30/30 [=====] - 0s 2ms/step - Loss: 47934.4297
    - mean_absolute_error: 167.5062 - val_loss: 355360.8750 -
    val_mean_absolute_error: 501.6027
504 Epoch 252/500
505 30/30 [=====] - 0s 2ms/step - Loss: 50615.7188
    - mean_absolute_error: 169.4687 - val_loss: 421265.4375 -
    val_mean_absolute_error: 551.1531
506 Epoch 253/500
```

```
507 30/30 [=====] - 0s 2ms/step - loss: 48406.2422
  - mean_absolute_error: 164.3118 - val_loss: 472513.4688 -
val_mean_absolute_error: 586.1519
508 Epoch 254/500
509 30/30 [=====] - 0s 2ms/step - loss: 51527.1172
  - mean_absolute_error: 168.9534 - val_loss: 368564.7188 -
val_mean_absolute_error: 508.0435
510 Epoch 255/500
511 30/30 [=====] - 0s 2ms/step - loss: 46582.9414
  - mean_absolute_error: 163.5641 - val_loss: 448593.6875 -
val_mean_absolute_error: 573.5742
512 Epoch 256/500
513 30/30 [=====] - 0s 2ms/step - loss: 47643.1875
  - mean_absolute_error: 162.4969 - val_loss: 344288.0312 -
val_mean_absolute_error: 492.7136
514 Epoch 257/500
515 30/30 [=====] - 0s 2ms/step - loss: 49135.4648
  - mean_absolute_error: 167.2064 - val_loss: 410325.3750 -
val_mean_absolute_error: 545.8128
516 Epoch 258/500
517 30/30 [=====] - 0s 2ms/step - loss: 44331.1562
  - mean_absolute_error: 159.1273 - val_loss: 400891.3438 -
val_mean_absolute_error: 533.2825
```

```
518 Epoch 259/500
519 30/30 [=====] - 0s 2ms/step - loss: 47342.7383
    - mean_absolute_error: 163.4430 - val_loss: 340131.6562 -
    val_mean_absolute_error: 491.0750
520 Epoch 260/500
521 30/30 [=====] - 0s 2ms/step - loss: 54419.9180
    - mean_absolute_error: 180.8028 - val_loss: 381335.3750 -
    val_mean_absolute_error: 511.4959
522 Epoch 261/500
523 30/30 [=====] - 0s 2ms/step - loss: 52693.6641
    - mean_absolute_error: 168.0389 - val_loss: 420340.4375 -
    val_mean_absolute_error: 555.5087
524 Epoch 262/500
525 30/30 [=====] - 0s 2ms/step - loss: 49805.9453
    - mean_absolute_error: 170.5441 - val_loss: 372180.0312 -
    val_mean_absolute_error: 513.5871
526 Epoch 263/500
527 30/30 [=====] - 0s 2ms/step - loss: 61858.3477
    - mean_absolute_error: 188.6613 - val_loss: 456019.0000 -
    val_mean_absolute_error: 576.4746
528 Epoch 264/500
529 30/30 [=====] - 0s 2ms/step - loss: 47119.0273
    - mean_absolute_error: 163.7681 - val_loss: 402501.5000 -
```

```
529 val_mean_absolute_error: 527.3246
530 Epoch 265/500
531 30/30 [=====] - 0s 2ms/step - Loss: 48170.5508
- mean_absolute_error: 167.9094 - val_loss: 357630.0312 -
val_mean_absolute_error: 509.5130
532 Epoch 266/500
533 30/30 [=====] - 0s 2ms/step - Loss: 47611.5156
- mean_absolute_error: 165.9109 - val_loss: 395129.5625 -
val_mean_absolute_error: 527.3293
534 Epoch 267/500
535 30/30 [=====] - 0s 2ms/step - Loss: 46189.6055
- mean_absolute_error: 163.5469 - val_loss: 282340.0000 -
val_mean_absolute_error: 444.9019
536 Epoch 268/500
537 30/30 [=====] - 0s 2ms/step - Loss: 58210.3438
- mean_absolute_error: 179.8168 - val_loss: 324144.2812 -
val_mean_absolute_error: 474.9287
538 Epoch 269/500
539 30/30 [=====] - 0s 2ms/step - Loss: 42677.0117
- mean_absolute_error: 158.4950 - val_loss: 347127.4062 -
val_mean_absolute_error: 499.4008
540 Epoch 270/500
541 30/30 [=====] - 0s 2ms/step - Loss: 49109.4141
```

```
541 - mean_absolute_error: 167.3849 - val_loss: 329776.7188 -
      val_mean_absolute_error: 478.9873
542 Epoch 271/500
543 30/30 [=====] - 0s 2ms/step - Loss: 47698.9922
      - mean_absolute_error: 163.7289 - val_loss: 287748.0000 -
      val_mean_absolute_error: 455.0422
544 Epoch 272/500
545 30/30 [=====] - 0s 2ms/step - Loss: 54177.2539
      - mean_absolute_error: 173.5199 - val_loss: 315899.6875 -
      val_mean_absolute_error: 470.8394
546 Epoch 273/500
547 30/30 [=====] - 0s 2ms/step - Loss: 45069.9102
      - mean_absolute_error: 160.8688 - val_loss: 424334.2500 -
      val_mean_absolute_error: 555.7723
548 Epoch 274/500
549 30/30 [=====] - 0s 2ms/step - Loss: 47140.5195
      - mean_absolute_error: 165.3905 - val_loss: 390103.1562 -
      val_mean_absolute_error: 518.4958
550 Epoch 275/500
551 30/30 [=====] - 0s 2ms/step - Loss: 47752.8320
      - mean_absolute_error: 163.0209 - val_loss: 328834.5625 -
      val_mean_absolute_error: 479.0298
552 Epoch 276/500
```

```
553 30/30 [=====] - 0s 2ms/step - loss: 52348.4297
  - mean_absolute_error: 173.2873 - val_loss: 406377.9688 -
    val_mean_absolute_error: 543.6071
554 Epoch 277/500
555 30/30 [=====] - 0s 2ms/step - loss: 41942.7617
  - mean_absolute_error: 154.5841 - val_loss: 434559.0000 -
    val_mean_absolute_error: 570.9573
556 Epoch 278/500
557 30/30 [=====] - 0s 2ms/step - loss: 49676.3086
  - mean_absolute_error: 165.3764 - val_loss: 336495.0625 -
    val_mean_absolute_error: 484.2439
558 Epoch 279/500
559 30/30 [=====] - 0s 2ms/step - loss: 48765.3672
  - mean_absolute_error: 164.0243 - val_loss: 504511.6562 -
    val_mean_absolute_error: 617.7942
560 Epoch 280/500
561 30/30 [=====] - 0s 2ms/step - loss: 51390.4258
  - mean_absolute_error: 172.5387 - val_loss: 310143.6562 -
    val_mean_absolute_error: 464.9530
562 Epoch 281/500
563 30/30 [=====] - 0s 2ms/step - loss: 50582.4492
  - mean_absolute_error: 169.9428 - val_loss: 339448.2500 -
    val_mean_absolute_error: 487.0238
```

```
564 Epoch 282/500
565 30/30 [=====] - 0s 2ms/step - loss: 43054.9883
      - mean_absolute_error: 155.0106 - val_loss: 304470.3438 -
      val_mean_absolute_error: 457.7818

566 Epoch 283/500
567 30/30 [=====] - 0s 2ms/step - val_loss: 50590.6641
      - mean_absolute_error: 167.0111 - val_mean_absolute_error: 510.6366
      val_mean_absolute_error: 457.7818

568 Epoch 284/500
569 30/30 [=====] - 0s 2ms/step - val_loss: 317930.5938 -
      - mean_absolute_error: 169.8073 - val_mean_absolute_error: 466.7307
      val_mean_absolute_error: 457.7818

570 Epoch 285/500
571 30/30 [=====] - 0s 2ms/step - val_loss: 365995.1875 -
      - mean_absolute_error: 182.7285 - val_mean_absolute_error: 502.0152
      val_mean_absolute_error: 457.7818

572 Epoch 286/500
573 30/30 [=====] - 0s 2ms/step - loss: 46759.0000
      - mean_absolute_error: 164.1641 - val_loss: 372000.0625 -
      val_mean_absolute_error: 519.6239
      val_mean_absolute_error: 457.7818

574 Epoch 287/500
575 30/30 [=====] - 0s 2ms/step - loss: 45418.2695
      - mean_absolute_error: 163.3486 - val_loss: 299206.5312 -
      val_mean_absolute_error: 45418.2695
```

```
575 val_mean_absolute_error: 460.7191
576 Epoch 288/500
577 30/30 [=====] - 0s 2ms/step - Loss: 41673.0977
    - mean_absolute_error: 156.1585 - val_loss: 361335.8750 -
        val_mean_absolute_error: 501.9331
578 Epoch 289/500
579 30/30 [=====] - 0s 2ms/step - Loss: 43809.4844
    - mean_absolute_error: 154.2490 - val_loss: 353411.3750 -
        val_mean_absolute_error: 496.5851
580 Epoch 290/500
581 30/30 [=====] - 0s 2ms/step - Loss: 47514.7734
    - mean_absolute_error: 162.5458 - val_loss: 323003.9375 -
        val_mean_absolute_error: 483.1130
582 Epoch 291/500
583 30/30 [=====] - 0s 2ms/step - Loss: 49895.0703
    - mean_absolute_error: 171.8520 - val_loss: 283395.7812 -
        val_mean_absolute_error: 439.5616
584 Epoch 292/500
585 30/30 [=====] - 0s 2ms/step - Loss: 51027.4414
    - mean_absolute_error: 172.8587 - val_loss: 370119.3438 -
        val_mean_absolute_error: 511.8145
586 Epoch 293/500
587 30/30 [=====] - 0s 2ms/step - Loss: 46513.1875
```

```
587 - mean_absolute_error: 164.4297 - val_loss: 397912.6250 -
      val_mean_absolute_error: 533.9955
588 Epoch 294/500
589 30/30 [=====] - 0s 2ms/step - Loss: 42291.9961
      - mean_absolute_error: 156.1913 - val_loss: 448969.3125 -
      val_mean_absolute_error: 577.2086
590 Epoch 295/500
591 30/30 [=====] - 0s 2ms/step - Loss: 51516.4531
      - mean_absolute_error: 169.3872 - val_loss: 437235.8438 -
      val_mean_absolute_error: 558.3633
592 Epoch 296/500
593 30/30 [=====] - 0s 2ms/step - Loss: 48850.9844
      - mean_absolute_error: 163.9903 - val_loss: 435157.8438 -
      val_mean_absolute_error: 572.2964
594 Epoch 297/500
595 30/30 [=====] - 0s 2ms/step - Loss: 43011.4648
      - mean_absolute_error: 152.6743 - val_loss: 346743.5625 -
      val_mean_absolute_error: 494.6509
596 Epoch 298/500
597 30/30 [=====] - 0s 2ms/step - Loss: 47109.1641
      - mean_absolute_error: 162.8381 - val_loss: 317815.9375 -
      val_mean_absolute_error: 473.5905
598 Epoch 299/500
```

```
599 30/30 [=====] - 0s 2ms/step - loss: 47571.0430
  - mean_absolute_error: 161.4864 - val_loss: 344012.2500 -
  val_mean_absolute_error: 492.6876

600 Epoch 300/500
601 30/30 [=====] - 0s 2ms/step - loss: 442229.1055
  - mean_absolute_error: 157.3417 - val_loss: 365129.9375 -
  val_mean_absolute_error: 507.2769

602 Epoch 301/500
603 30/30 [=====] - 0s 2ms/step - loss: 48563.4531
  - mean_absolute_error: 165.1408 - val_loss: 383334.6562 -
  val_mean_absolute_error: 516.0015

604 Epoch 302/500
605 30/30 [=====] - 0s 2ms/step - loss: 49518.4805
  - mean_absolute_error: 163.5865 - val_loss: 402997.8125 -
  val_mean_absolute_error: 539.0708

606 Epoch 303/500
607 30/30 [=====] - 0s 2ms/step - loss: 49629.1406
  - mean_absolute_error: 167.3937 - val_loss: 299208.8750 -
  val_mean_absolute_error: 446.4298

608 Epoch 304/500
609 30/30 [=====] - 0s 2ms/step - loss: 50264.7930
  - mean_absolute_error: 168.8351 - val_loss: 354796.4375 -
  val_mean_absolute_error: 500.4116
```

```
610 Epoch 305/500
611 30/30 [=====] - 0s 2ms/step - loss: 493337.6758
      - mean_absolute_error: 164.9731 - val_loss: 342501.5938 -
      val_mean_absolute_error: 485.9324
612 Epoch 306/500
613 30/30 [=====] - 0s 2ms/step - val_loss: 50698.0078
      - mean_absolute_error: 169.9823 - val_loss: 351895.5312 -
      val_mean_absolute_error: 503.5514
614 Epoch 307/500
615 30/30 [=====] - 0s 2ms/step - val_loss: 246485.8906 -
      - mean_absolute_error: 174.8093 - val_loss: 334872.2812 -
      val_mean_absolute_error: 408.7135
616 Epoch 308/500
617 30/30 [=====] - 0s 2ms/step - loss: 49508.8555
      - mean_absolute_error: 167.0690 - val_loss: 334872.2812 -
      val_mean_absolute_error: 484.0919
618 Epoch 309/500
619 30/30 [=====] - 0s 2ms/step - loss: 50247.6250
      - mean_absolute_error: 167.5969 - val_loss: 403882.5938 -
      val_mean_absolute_error: 532.6171
620 Epoch 310/500
621 30/30 [=====] - 0s 2ms/step - loss: 46869.4570
      - mean_absolute_error: 164.5744 - val_loss: 335933.5312 -
```

```
621 val_mean_absolute_error: 487.6719
622 Epoch 311/500
623 30/30 [=====] - 0s 2ms/step - Loss: 43954.2422
    - mean_absolute_error: 155.6539 - val_loss: 475344.7188 -
        val_mean_absolute_error: 596.2847
624 Epoch 312/500
625 30/30 [=====] - 0s 2ms/step - Loss: 47817.7188
    - mean_absolute_error: 163.4818 - val_loss: 334723.0000 -
        val_mean_absolute_error: 486.0699
626 Epoch 313/500
627 30/30 [=====] - 0s 2ms/step - Loss: 43700.9961
    - mean_absolute_error: 156.7969 - val_loss: 319124.5625 -
        val_mean_absolute_error: 471.6444
628 Epoch 314/500
629 30/30 [=====] - 0s 2ms/step - Loss: 45269.9219
    - mean_absolute_error: 160.7579 - val_loss: 334989.7500 -
        val_mean_absolute_error: 485.6593
630 Epoch 315/500
631 30/30 [=====] - 0s 2ms/step - Loss: 51019.0781
    - mean_absolute_error: 174.0481 - val_loss: 423136.6875 -
        val_mean_absolute_error: 563.2159
632 Epoch 316/500
633 30/30 [=====] - 0s 2ms/step - Loss: 44239.6055
```

```
633 - mean_absolute_error: 159.1689 - val_loss: 387574.1562 -
      val_mean_absolute_error: 532.9166
634 Epoch 317/500
635 30/30 [=====] - 0s 2ms/step - loss: 43794.7617
      - mean_absolute_error: 162.4834 - val_loss: 334333.7812 -
      val_mean_absolute_error: 476.0401
636 Epoch 318/500
637 30/30 [=====] - 0s 2ms/step - loss: 51182.1797
      - mean_absolute_error: 170.0713 - val_loss: 443386.6562 -
      val_mean_absolute_error: 570.6603
638 Epoch 319/500
639 30/30 [=====] - 0s 2ms/step - loss: 52753.3242
      - mean_absolute_error: 168.4916 - val_loss: 396297.8125 -
      val_mean_absolute_error: 530.1340
640 Epoch 320/500
641 30/30 [=====] - 0s 2ms/step - loss: 43281.1914
      - mean_absolute_error: 156.9041 - val_loss: 331249.1562 -
      val_mean_absolute_error: 479.7202
642 Epoch 321/500
643 30/30 [=====] - 0s 2ms/step - loss: 43379.3555
      - mean_absolute_error: 158.0740 - val_loss: 385958.4062 -
      val_mean_absolute_error: 518.3947
644 Epoch 322/500
```

```
645 30/30 [=====] - 0s 2ms/step - loss: 43886.7070
- mean_absolute_error: 158.2017 - val_loss: 311893.1250 -
val_mean_absolute_error: 463.4110
646 Epoch 323/500
- mean_absolute_error: 161.4399 - val_loss: 426012.7812 -
val_mean_absolute_error: 566.5393
647 30/30 [=====] - 0s 2ms/step - loss: 44067.5742
- mean_absolute_error: 158.2531 - val_loss: 454825.6875 -
val_mean_absolute_error: 574.5679
648 Epoch 324/500
- mean_absolute_error: 163.9330 - val_loss: 422642.8125 -
val_mean_absolute_error: 574.5679
649 30/30 [=====] - 0s 2ms/step - loss: 44088.9844
- mean_absolute_error: 174.0579 - val_loss: 416590.8750 -
val_mean_absolute_error: 551.7995
650 Epoch 325/500
- mean_absolute_error: 171.9707 - val_loss: 52012.2695
val_mean_absolute_error: 553.8638
651 30/30 [=====] - 0s 2ms/step - loss: 45899.7422
- mean_absolute_error: 174.0579 - val_loss: 416590.8750 -
val_mean_absolute_error: 551.7995
652 Epoch 326/500
- mean_absolute_error: 171.9707 - val_loss: 51169.8242
- mean_absolute_error: 404493.4062 -
val_mean_absolute_error: 531.4299
```

```
656 Epoch 328/500
657 30/30 [=====] - 0s 2ms/step - loss: 48147.8750
    - mean_absolute_error: 162.6459 - val_loss: 266829.1562 -
    val_mean_absolute_error: 427.6622
658 Epoch 329/500
659 30/30 [=====] - 0s 2ms/step - loss: 58495.1719
    - mean_absolute_error: 191.3273 - val_loss: 336370.8125 -
    val_mean_absolute_error: 488.2307
660 Epoch 330/500
661 30/30 [=====] - 0s 2ms/step - loss: 50903.6719
    - mean_absolute_error: 175.7487 - val_loss: 478731.8750 -
    val_mean_absolute_error: 584.4703
662 Epoch 331/500
663 30/30 [=====] - 0s 2ms/step - loss: 50203.4219
    - mean_absolute_error: 166.8003 - val_loss: 392343.7812 -
    val_mean_absolute_error: 525.4124
664 Epoch 332/500
665 30/30 [=====] - 0s 2ms/step - loss: 46866.2109
    - mean_absolute_error: 156.4679 - val_loss: 308661.1250 -
    val_mean_absolute_error: 465.5020
666 Epoch 333/500
667 30/30 [=====] - 0s 2ms/step - loss: 51172.3984
    - mean_absolute_error: 169.3844 - val_loss: 358033.3438 -
```

```
667 val_mean_absolute_error: 508.0615
668 Epoch 334/500
669 30/30 [=====] - 0s 2ms/step - Loss: 47753.6016
    - mean_absolute_error: 162.0969 - val_loss: 406291.5625 -
        val_mean_absolute_error: 539.2659
670 Epoch 335/500
671 30/30 [=====] - 0s 2ms/step - Loss: 50206.8594
    - mean_absolute_error: 170.6537 - val_loss: 474900.7500 -
        val_mean_absolute_error: 583.0416
672 Epoch 336/500
673 30/30 [=====] - 0s 2ms/step - Loss: 49128.6836
    - mean_absolute_error: 168.2643 - val_loss: 267668.7500 -
        val_mean_absolute_error: 438.6574
674 Epoch 337/500
675 30/30 [=====] - 0s 2ms/step - Loss: 52745.8203
    - mean_absolute_error: 172.0606 - val_loss: 406604.3125 -
        val_mean_absolute_error: 534.5553
676 Epoch 338/500
677 30/30 [=====] - 0s 2ms/step - Loss: 45978.1953
    - mean_absolute_error: 161.5190 - val_loss: 329452.4688 -
        val_mean_absolute_error: 486.5511
678 Epoch 339/500
679 30/30 [=====] - 0s 2ms/step - Loss: 50804.8555
```

```
679  - mean_absolute_error: 171.2636 - val_loss: 317785.1250 -
    val_mean_absolute_error: 465.8876
680 Epoch 340/500
681 30/30 [=====] - 0s 2ms/step - Loss: 53103.6641
    - mean_absolute_error: 178.4855 - val_loss: 309588.9375 -
    val_mean_absolute_error: 469.3619
682 Epoch 341/500
683 30/30 [=====] - 0s 2ms/step - Loss: 58277.7734
    - mean_absolute_error: 186.7308 - val_loss: 425906.2188 -
    val_mean_absolute_error: 554.8720
684 Epoch 342/500
685 30/30 [=====] - 0s 2ms/step - Loss: 47005.8164
    - mean_absolute_error: 164.6797 - val_loss: 431225.1875 -
    val_mean_absolute_error: 555.8514
686 Epoch 343/500
687 30/30 [=====] - 0s 2ms/step - Loss: 43949.3516
    - mean_absolute_error: 156.2305 - val_loss: 437802.9062 -
    val_mean_absolute_error: 564.1113
688 Epoch 344/500
689 30/30 [=====] - 0s 2ms/step - Loss: 42468.0977
    - mean_absolute_error: 158.6194 - val_loss: 304620.5625 -
    val_mean_absolute_error: 462.9323
690 Epoch 345/500
```

```
691 30/30 [=====] - 0s 2ms/step - loss: 50956.4258
  - mean_absolute_error: 168.1369 - val_loss: 335295.6875 -
    val_mean_absolute_error: 489.3815
692 Epoch 346/500
693 30/30 [=====] - 0s 2ms/step - loss: 47966.6016
  - mean_absolute_error: 165.4250 - val_loss: 298135.8438 -
    val_mean_absolute_error: 450.3122
694 Epoch 347/500
695 30/30 [=====] - 0s 2ms/step - loss: 48039.8633
  - mean_absolute_error: 165.8909 - val_loss: 385101.4688 -
    val_mean_absolute_error: 527.4692
696 Epoch 348/500
697 30/30 [=====] - 0s 2ms/step - loss: 38938.6953
  - mean_absolute_error: 149.9956 - val_loss: 381508.6562 -
    val_mean_absolute_error: 517.7653
698 Epoch 349/500
699 30/30 [=====] - 0s 2ms/step - loss: 36611.4922
  - mean_absolute_error: 146.8053 - val_loss: 326698.4688 -
    val_mean_absolute_error: 484.8115
700 Epoch 350/500
701 30/30 [=====] - 0s 2ms/step - loss: 42496.8945
  - mean_absolute_error: 153.8337 - val_loss: 402557.3125 -
    val_mean_absolute_error: 543.4835
```

702	Epoch 351/500
703	30/30 [=====] - 0s 2ms/step - loss: 37914.6680 - mean_absolute_error: 145.3915 - val_loss: 340543.3438 - val_mean_absolute_error: 481.9135
704	Epoch 352/500
705	30/30 [=====] - 0s 2ms/step - loss: 40577.6094 - mean_absolute_error: 147.3407 - val_loss: 443831.1250 - val_mean_absolute_error: 572.0093
706	Epoch 353/500
707	30/30 [=====] - 0s 2ms/step - loss: 39331.0078 - mean_absolute_error: 150.0386 - val_loss: 402686.0312 - val_mean_absolute_error: 544.3696
708	Epoch 354/500
709	30/30 [=====] - 0s 2ms/step - loss: 41732.1523 - mean_absolute_error: 154.0603 - val_loss: 388084.5625 - val_mean_absolute_error: 525.5465
710	Epoch 355/500
711	30/30 [=====] - 0s 2ms/step - loss: 42364.8086 - mean_absolute_error: 151.5804 - val_loss: 443361.8750 - val_mean_absolute_error: 571.8468
712	Epoch 356/500
713	30/30 [=====] - 0s 2ms/step - loss: 40975.3320 - mean_absolute_error: 152.8318 - val_loss: 348556.7812 -

```
713 val_mean_absolute_error: 498.1928
714 Epoch 357/500
715 30/30 [=====] - 0s 2ms/step - Loss: 44554.2344
    - mean_absolute_error: 164.2269 - val_loss: 303865.8750 -
    val_mean_absolute_error: 463.3036
716 Epoch 358/500
717 30/30 [=====] - 0s 2ms/step - Loss: 49895.7539
    - mean_absolute_error: 166.2205 - val_loss: 276194.6562 -
    val_mean_absolute_error: 443.2205
718 Epoch 359/500
719 30/30 [=====] - 0s 2ms/step - Loss: 48220.0898
    - mean_absolute_error: 169.4299 - val_loss: 349528.0938 -
    val_mean_absolute_error: 486.3915
720 Epoch 360/500
721 30/30 [=====] - 0s 2ms/step - Loss: 41289.9180
    - mean_absolute_error: 151.4239 - val_loss: 325828.3750 -
    val_mean_absolute_error: 480.3117
722 Epoch 361/500
723 30/30 [=====] - 0s 2ms/step - Loss: 39368.9727
    - mean_absolute_error: 147.0807 - val_loss: 395996.5000 -
    val_mean_absolute_error: 528.6731
724 Epoch 362/500
725 30/30 [=====] - 0s 2ms/step - Loss: 39093.4258
```

```
725  - mean_absolute_error: 149.3023 - val_loss: 360756.4375 -
    val_mean_absolute_error: 505.1991
726 Epoch 363/500
727 30/30 [=====] - 0s 2ms/step - Loss: 39409.6953
    - mean_absolute_error: 148.8010 - val_loss: 294322.4375 -
    val_mean_absolute_error: 451.6217
728 Epoch 364/500
729 30/30 [=====] - 0s 2ms/step - Loss: 47368.6367
    - mean_absolute_error: 163.5563 - val_loss: 456248.4375 -
    val_mean_absolute_error: 583.4058
730 Epoch 365/500
731 30/30 [=====] - 0s 2ms/step - Loss: 39192.6172
    - mean_absolute_error: 147.6086 - val_loss: 397263.0625 -
    val_mean_absolute_error: 536.0134
732 Epoch 366/500
733 30/30 [=====] - 0s 2ms/step - Loss: 39933.4961
    - mean_absolute_error: 152.1961 - val_loss: 376996.7500 -
    val_mean_absolute_error: 515.4606
734 Epoch 367/500
735 30/30 [=====] - 0s 2ms/step - Loss: 35479.3086
    - mean_absolute_error: 140.9519 - val_loss: 358069.0625 -
    val_mean_absolute_error: 499.4095
736 Epoch 368/500
```

```
737 30/30 [=====] - 0s 2ms/step - loss: 39921.2109
  - mean_absolute_error: 152.1638 - val_loss: 464366.8750 -
  val_mean_absolute_error: 574.3187
738 Epoch 369/500
  - mean_absolute_error: 140.4401 - val_loss: 36738.1719
  val_mean_absolute_error: 594.6287
740 Epoch 370/500
  - 0s 2ms/step - loss: 41329.6719
741 30/30 [=====] - 0s 2ms/step - loss: 41934.5312 -
  - mean_absolute_error: 156.9827 - val_loss: 448294.8438 -
  val_mean_absolute_error: 568.9962
742 Epoch 371/500
  - 0s 2ms/step - loss: 41810.5312 -
  val_mean_absolute_error: 557.9399
744 Epoch 372/500
  - 0s 2ms/step - loss: 50953.7734
745 30/30 [=====] - 0s 2ms/step - loss: 50953.7734
  - mean_absolute_error: 174.4550 - val_loss: 308201.8438 -
  val_mean_absolute_error: 464.3715
746 Epoch 373/500
  - 0s 2ms/step - loss: 39394.6523
747 30/30 [=====] - 0s 2ms/step - loss: 386435.7188 -
  - mean_absolute_error: 151.5796 - val_loss: 39394.0071
  val_mean_absolute_error: 527.0071
```

```
748 Epoch 374/500
749 30/30 [=====] - 0s 2ms/step - loss: 43386.3125
    - mean_absolute_error: 155.4735 - val_loss: 309872.3125 -
    val_mean_absolute_error: 470.0915
750 Epoch 375/500
751 30/30 [=====] - 0s 2ms/step - loss: 38325.3086
    - mean_absolute_error: 145.7343 - val_loss: 345971.1875 -
    val_mean_absolute_error: 494.5943
752 Epoch 376/500
753 30/30 [=====] - 0s 2ms/step - loss: 42881.6797
    - mean_absolute_error: 153.2672 - val_loss: 403585.6875 -
    val_mean_absolute_error: 533.2248
754 Epoch 377/500
755 30/30 [=====] - 0s 2ms/step - loss: 41902.9375
    - mean_absolute_error: 153.1061 - val_loss: 325858.3438 -
    val_mean_absolute_error: 479.4911
756 Epoch 378/500
757 30/30 [=====] - 0s 2ms/step - loss: 43798.1250
    - mean_absolute_error: 155.2978 - val_loss: 317119.7812 -
    val_mean_absolute_error: 472.7670
758 Epoch 379/500
759 30/30 [=====] - 0s 2ms/step - loss: 34540.5664
    - mean_absolute_error: 138.7351 - val_loss: 371259.5625 -
```

```
759 val_mean_absolute_error: 519.1153
760 Epoch 380/500
761 30/30 [=====] - 0s 2ms/step - Loss: 35182.8828
    - mean_absolute_error: 136.0987 - val_loss: 397801.3438 -
    val_mean_absolute_error: 539.1606
762 Epoch 381/500
763 30/30 [=====] - 0s 2ms/step - Loss: 33201.6289
    - mean_absolute_error: 135.6751 - val_loss: 300363.0625 -
    val_mean_absolute_error: 454.7305
764 Epoch 382/500
765 30/30 [=====] - 0s 2ms/step - Loss: 40441.2422
    - mean_absolute_error: 154.4964 - val_loss: 268856.0312 -
    val_mean_absolute_error: 441.3592
766 Epoch 383/500
767 30/30 [=====] - 0s 2ms/step - Loss: 41265.4844
    - mean_absolute_error: 153.8806 - val_loss: 286245.1250 -
    val_mean_absolute_error: 449.4281
768 Epoch 384/500
769 30/30 [=====] - 0s 2ms/step - Loss: 48993.6094
    - mean_absolute_error: 173.4180 - val_loss: 423913.8438 -
    val_mean_absolute_error: 556.2883
770 Epoch 385/500
771 30/30 [=====] - 0s 2ms/step - Loss: 43733.1484
```

```
771 - mean_absolute_error: 161.2198 - val_loss: 346222.1562 -
    val_mean_absolute_error: 488.9987
772 Epoch 386/500
773 30/30 [=====] - 0s 2ms/step - Loss: 38472.2266
    - mean_absolute_error: 144.3509 - val_loss: 309213.6562 -
    val_mean_absolute_error: 462.4968
774 Epoch 387/500
775 30/30 [=====] - 0s 2ms/step - Loss: 40227.1406
    - mean_absolute_error: 150.3887 - val_loss: 480507.5000 -
    val_mean_absolute_error: 601.1747
776 Epoch 388/500
777 30/30 [=====] - 0s 2ms/step - Loss: 39965.4531
    - mean_absolute_error: 151.1297 - val_loss: 367617.5312 -
    val_mean_absolute_error: 508.9848
778 Epoch 389/500
779 30/30 [=====] - 0s 2ms/step - Loss: 33616.3711
    - mean_absolute_error: 140.7559 - val_loss: 363173.6875 -
    val_mean_absolute_error: 504.4708
780 Epoch 390/500
781 30/30 [=====] - 0s 2ms/step - Loss: 37879.0898
    - mean_absolute_error: 145.8174 - val_loss: 426977.3438 -
    val_mean_absolute_error: 553.4780
782 Epoch 391/500
```

```
783 30/30 [=====] - 0s 2ms/step - loss: 39134.9414
  - mean_absolute_error: 147.5593 - val_loss: 556361.5625 -
  val_mean_absolute_error: 656.8260

784 Epoch 392/500
785 30/30 [=====] - 0s 2ms/step - loss: 43042.1172
  - mean_absolute_error: 157.8913 - val_loss: 298114.1562 -
  val_mean_absolute_error: 448.9662

786 Epoch 393/500
787 30/30 [=====] - 0s 2ms/step - loss: 36016.4570
  - mean_absolute_error: 143.2036 - val_loss: 289191.2812 -
  val_mean_absolute_error: 446.8574

788 Epoch 394/500
789 30/30 [=====] - 0s 2ms/step - loss: 40131.1758
  - mean_absolute_error: 151.2706 - val_loss: 299402.9688 -
  val_mean_absolute_error: 455.7306

790 Epoch 395/500
791 30/30 [=====] - 0s 2ms/step - loss: 29356.4258
  - mean_absolute_error: 129.8927 - val_loss: 317050.9688 -
  val_mean_absolute_error: 471.2249

792 Epoch 396/500
793 30/30 [=====] - 0s 2ms/step - loss: 36632.1719
  - mean_absolute_error: 147.4276 - val_loss: 372660.6875 -
  val_mean_absolute_error: 513.3649
```

```
794 Epoch 397/500
795 30/30 [=====] - 0s 2ms/step - loss: 32725.5137
    - mean_absolute_error: 133.1510 - val_loss: 341601.1562 -
    val_mean_absolute_error: 490.4564
796 Epoch 398/500
797 30/30 [=====] - 0s 2ms/step - val_loss: 33469.5508
    - mean_absolute_error: 137.0837 - val_loss: 405803.6875 -
    val_mean_absolute_error: 539.4523
798 Epoch 399/500
799 30/30 [=====] - 0s 2ms/step - loss: 31818.5352
    - mean_absolute_error: 130.9774 - val_loss: 380641.8750 -
    val_mean_absolute_error: 522.6770
800 Epoch 400/500
801 30/30 [=====] - 0s 2ms/step - loss: 33761.7305
    - mean_absolute_error: 139.7326 - val_loss: 446499.7188 -
    val_mean_absolute_error: 577.1379
802 Epoch 401/500
803 30/30 [=====] - 0s 2ms/step - loss: 35327.1797
    - mean_absolute_error: 144.0609 - val_loss: 312298.3438 -
    val_mean_absolute_error: 462.0587
804 Epoch 402/500
805 30/30 [=====] - 0s 2ms/step - loss: 31816.8125
    - mean_absolute_error: 136.6165 - val_loss: 342001.9375 -
```

```
805 val_mean_absolute_error: 479.2391
806 Epoch 403/500
807 30/30 [=====] - 0s 2ms/step - Loss: 31891.4922
    - mean_absolute_error: 135.6991 - val_loss: 430078.4375 -
    val_mean_absolute_error: 572.2868
808 Epoch 404/500
809 30/30 [=====] - 0s 2ms/step - Loss: 33408.4531
    - mean_absolute_error: 139.6698 - val_loss: 468369.2500 -
    val_mean_absolute_error: 600.6507
810 Epoch 405/500
811 30/30 [=====] - 0s 2ms/step - Loss: 31506.6387
    - mean_absolute_error: 134.8381 - val_loss: 385076.5938 -
    val_mean_absolute_error: 531.3890
812 Epoch 406/500
813 30/30 [=====] - 0s 2ms/step - Loss: 28527.8926
    - mean_absolute_error: 127.4987 - val_loss: 378418.7500 -
    val_mean_absolute_error: 520.6300
814 Epoch 407/500
815 30/30 [=====] - 0s 2ms/step - Loss: 30658.4336
    - mean_absolute_error: 132.1223 - val_loss: 304143.3438 -
    val_mean_absolute_error: 461.8871
816 Epoch 408/500
817 30/30 [=====] - 0s 2ms/step - Loss: 29141.8711
```

```
817  - mean_absolute_error: 130.2354 - val_loss: 396410.4688 -
  val_mean_absolute_error: 530.0204
818 Epoch 409/500
819 30/30 [=====] - 0s 2ms/step - Loss: 30237.6113
  - mean_absolute_error: 130.3895 - val_loss: 412592.0000 -
  val_mean_absolute_error: 553.3223
820 Epoch 410/500
821 30/30 [=====] - 0s 2ms/step - Loss: 28964.2539
  - mean_absolute_error: 132.3492 - val_loss: 313427.6875 -
  val_mean_absolute_error: 464.6113
822 Epoch 411/500
823 30/30 [=====] - 0s 2ms/step - Loss: 35129.3672
  - mean_absolute_error: 142.6807 - val_loss: 311498.8438 -
  val_mean_absolute_error: 475.7271
824 Epoch 412/500
825 30/30 [=====] - 0s 2ms/step - Loss: 28656.8438
  - mean_absolute_error: 128.9279 - val_loss: 377754.9062 -
  val_mean_absolute_error: 517.8653
826 Epoch 413/500
827 30/30 [=====] - 0s 2ms/step - Loss: 28490.0469
  - mean_absolute_error: 127.2955 - val_loss: 441249.6562 -
  val_mean_absolute_error: 561.6503
828 Epoch 414/500
```

```
829 30/30 [=====] - 0s 2ms/step - loss: 26905.0664
  - mean_absolute_error: 120.7934 - val_loss: 398536.7188 -
val_mean_absolute_error: 527.3801

830 Epoch 415/500
831 30/30 [=====] - 0s 2ms/step - loss: 28374.1289
  - mean_absolute_error: 127.3752 - val_loss: 367304.6875 -
val_mean_absolute_error: 506.2217

832 Epoch 416/500
833 30/30 [=====] - 0s 2ms/step - loss: 27732.7207
  - mean_absolute_error: 126.6671 - val_loss: 391350.6875 -
val_mean_absolute_error: 535.3098

834 Epoch 417/500
835 30/30 [=====] - 0s 2ms/step - loss: 25697.9336
  - mean_absolute_error: 119.1733 - val_loss: 356117.7188 -
val_mean_absolute_error: 504.0728

836 Epoch 418/500
837 30/30 [=====] - 0s 2ms/step - loss: 31715.1074
  - mean_absolute_error: 136.7646 - val_loss: 380492.1250 -
val_mean_absolute_error: 526.3809

838 Epoch 419/500
839 30/30 [=====] - 0s 2ms/step - loss: 26759.5195
  - mean_absolute_error: 124.4694 - val_loss: 368730.9688 -
val_mean_absolute_error: 523.4449
```

840	Epoch 420/500	
841	30/30	[=====] - 0s 2ms/step - loss: 27983.0664 - mean_absolute_error: 126.3542 - val_loss: 444296.3125 - val_mean_absolute_error: 576.7374
842	Epoch 421/500	
843	30/30	[=====] - 0s 2ms/step - loss: 25361.7090 - mean_absolute_error: 118.8777 - val_loss: 402439.6875 - val_mean_absolute_error: 537.7119
844	Epoch 422/500	
845	30/30	[=====] - 0s 2ms/step - loss: 24905.6230 - mean_absolute_error: 119.8383 - val_loss: 387336.7500 - val_mean_absolute_error: 528.2039
846	Epoch 423/500	
847	30/30	[=====] - 0s 2ms/step - loss: 27795.6777 - mean_absolute_error: 126.4976 - val_loss: 361591.4375 - val_mean_absolute_error: 506.4527
848	Epoch 424/500	
849	30/30	[=====] - 0s 2ms/step - loss: 27690.0508 - mean_absolute_error: 124.9687 - val_loss: 383992.0938 - val_mean_absolute_error: 526.6521
850	Epoch 425/500	
851	30/30	[=====] - 0s 2ms/step - loss: 28884.6406 - mean_absolute_error: 127.2005 - val_loss: 423069.0000 -

```
851 val_mean_absolute_error: 556.6115
852 Epoch 426/500
853 30/30 [=====] - 0s 2ms/step - loss: 27647.7188
- mean_absolute_error: 126.3540 - val_loss: 367061.9688 -
val_mean_absolute_error: 506.1410
854 Epoch 427/500
855 30/30 [=====] - 0s 2ms/step - loss: 25563.3613
- mean_absolute_error: 121.3127 - val_loss: 432820.8750 -
val_mean_absolute_error: 556.8485
856 Epoch 428/500
857 30/30 [=====] - 0s 2ms/step - loss: 29151.0020
- mean_absolute_error: 127.1087 - val_loss: 410023.7500 -
val_mean_absolute_error: 539.9576
858 Epoch 429/500
859 30/30 [=====] - 0s 2ms/step - loss: 25336.7129
- mean_absolute_error: 120.2783 - val_loss: 384038.4688 -
val_mean_absolute_error: 523.0327
860 Epoch 430/500
861 30/30 [=====] - 0s 2ms/step - loss: 25048.7891
- mean_absolute_error: 117.2292 - val_loss: 361364.1250 -
val_mean_absolute_error: 498.3701
862 Epoch 431/500
863 30/30 [=====] - 0s 2ms/step - loss: 26674.6816
```

```
863 - mean_absolute_error: 121.2840 - val_loss: 356590.0938 -
    val_mean_absolute_error: 498.8082
864 Epoch 432/500
865 30/30 [=====] - 0s 2ms/step - loss: 24929.7324
    - mean_absolute_error: 119.5999 - val_loss: 403805.2188 -
    val_mean_absolute_error: 535.9296
866 Epoch 433/500
867 30/30 [=====] - 0s 2ms/step - loss: 25720.3242
    - mean_absolute_error: 118.8357 - val_loss: 439574.6562 -
    val_mean_absolute_error: 564.6901
868 Epoch 434/500
869 30/30 [=====] - 0s 2ms/step - loss: 25737.6523
    - mean_absolute_error: 121.8846 - val_loss: 401437.7812 -
    val_mean_absolute_error: 537.3723
870 Epoch 435/500
871 30/30 [=====] - 0s 2ms/step - loss: 250085.9102
    - mean_absolute_error: 119.2954 - val_loss: 449962.5938 -
    val_mean_absolute_error: 562.1742
872 Epoch 436/500
873 30/30 [=====] - 0s 2ms/step - loss: 26337.1289
    - mean_absolute_error: 122.0379 - val_loss: 350245.8125 -
    val_mean_absolute_error: 491.7606
874 Epoch 437/500
```

```
875 30/30 [=====] - 0s 2ms/step - loss: 24782.5410
  - mean_absolute_error: 117.0269 - val_loss: 395059.1250 -
  val_mean_absolute_error: 527.6115
876 Epoch 438/500
877 30/30 [=====] - 0s 3ms/step - loss: 22831.3105
  - mean_absolute_error: 113.5351 - val_loss: 402778.7500 -
  val_mean_absolute_error: 526.2753
878 Epoch 439/500
879 30/30 [=====] - 0s 2ms/step - loss: 25590.2852
  - mean_absolute_error: 121.6722 - val_loss: 419291.6562 -
  val_mean_absolute_error: 543.2506
880 Epoch 440/500
881 30/30 [=====] - 0s 2ms/step - loss: 30096.1289
  - mean_absolute_error: 129.0877 - val_loss: 451524.0938 -
  val_mean_absolute_error: 573.5886
882 Epoch 441/500
883 30/30 [=====] - 0s 2ms/step - loss: 28856.1973
  - mean_absolute_error: 127.6518 - val_loss: 429756.7812 -
  val_mean_absolute_error: 548.3673
884 Epoch 442/500
885 30/30 [=====] - 0s 2ms/step - loss: 24365.4512
  - mean_absolute_error: 118.0729 - val_loss: 388907.6562 -
  val_mean_absolute_error: 519.4105
```

```
886 Epoch 443/500
887 30/30 [=====] - 0s 2ms/step - loss: 26547.7715
    - mean_absolute_error: 120.0176 - val_loss: 416083.8750 -
    val_mean_absolute_error: 540.6457
888 Epoch 444/500
889 30/30 [=====] - 0s 2ms/step - loss: 22774.9336
    - mean_absolute_error: 111.5995 - val_loss: 350908.7500 -
    val_mean_absolute_error: 494.7806
890 Epoch 445/500
891 30/30 [=====] - 0s 2ms/step - loss: 31192.7148
    - mean_absolute_error: 130.1089 - val_loss: 417975.1250 -
    val_mean_absolute_error: 552.7850
892 Epoch 446/500
893 30/30 [=====] - 0s 2ms/step - loss: 28621.2793
    - mean_absolute_error: 126.9033 - val_loss: 399794.6562 -
    val_mean_absolute_error: 537.9470
894 Epoch 447/500
895 30/30 [=====] - 0s 2ms/step - loss: 25326.4824
    - mean_absolute_error: 120.0500 - val_loss: 363464.0000 -
    val_mean_absolute_error: 504.2797
896 Epoch 448/500
897 30/30 [=====] - 0s 2ms/step - loss: 30651.5664
    - mean_absolute_error: 132.7187 - val_loss: 417362.4688 -
```

```
897 val_mean_absolute_error: 538.6723
898 Epoch 449/500
899 30/30 [=====] - 0s 2ms/step - Loss: 24736.9219
  - mean_absolute_error: 115.6350 - val_loss: 368659.5938 -
    val_mean_absolute_error: 504.7807
900 Epoch 450/500
901 30/30 [=====] - 0s 2ms/step - Loss: 23351.9043
  - mean_absolute_error: 116.5222 - val_loss: 400389.8125 -
    val_mean_absolute_error: 520.0004
902 Epoch 451/500
903 30/30 [=====] - 0s 2ms/step - Loss: 27391.3887
  - mean_absolute_error: 127.2545 - val_loss: 337982.1562 -
    val_mean_absolute_error: 482.4918
904 Epoch 452/500
905 30/30 [=====] - 0s 2ms/step - Loss: 27124.8145
  - mean_absolute_error: 121.9284 - val_loss: 430498.8750 -
    val_mean_absolute_error: 546.7862
906 Epoch 453/500
907 30/30 [=====] - 0s 2ms/step - Loss: 26847.4062
  - mean_absolute_error: 119.6886 - val_loss: 346149.3125 -
    val_mean_absolute_error: 488.5856
908 Epoch 454/500
909 30/30 [=====] - 0s 2ms/step - Loss: 25358.0352
```

```
909 - mean_absolute_error: 118.5499 - val_loss: 463845.4062 -
val_mean_absolute_error: 586.2396
910 Epoch 455/500
911 30/30 [=====] - 0s 2ms/step - Loss: 24674.9941
- mean_absolute_error: 120.7840 - val_loss: 428721.0625 -
val_mean_absolute_error: 555.9615
912 Epoch 456/500
913 30/30 [=====] - 0s 2ms/step - val_loss: 25186.3887
- mean_absolute_error: 117.3030 - val_loss: 415141.9062 -
val_mean_absolute_error: 540.6832
914 Epoch 457/500
915 30/30 [=====] - 0s 2ms/step - Loss: 23756.8008
- mean_absolute_error: 115.1439 - val_loss: 439923.0000 -
val_mean_absolute_error: 563.1096
916 Epoch 458/500
917 30/30 [=====] - 0s 2ms/step - Loss: 25924.1914
- mean_absolute_error: 118.1744 - val_loss: 380572.3125 -
val_mean_absolute_error: 528.0894
918 Epoch 459/500
919 30/30 [=====] - 0s 2ms/step - Loss: 24864.3340
- mean_absolute_error: 118.2523 - val_loss: 312507.0312 -
val_mean_absolute_error: 467.0092
920 Epoch 460/500
```

```
921 30/30 [=====] - 0s 2ms/step - loss: 26364.3164
  - mean_absolute_error: 122.8241 - val_loss: 357956.2812 -
  val_mean_absolute_error: 487.9474

922 Epoch 461/500
923 30/30 [=====] - 0s 2ms/step - loss: 23376.2969
  - mean_absolute_error: 114.6541 - val_loss: 464381.4688 -
  val_mean_absolute_error: 583.7551

924 Epoch 462/500
925 30/30 [=====] - 0s 2ms/step - loss: 28873.6055
  - mean_absolute_error: 131.4969 - val_loss: 348244.3750 -
  val_mean_absolute_error: 490.0708

926 Epoch 463/500
927 30/30 [=====] - 0s 2ms/step - loss: 26949.2969
  - mean_absolute_error: 123.8049 - val_loss: 380965.0000 -
  val_mean_absolute_error: 511.5766

928 Epoch 464/500
929 30/30 [=====] - 0s 2ms/step - loss: 24822.0840
  - mean_absolute_error: 120.7569 - val_loss: 403642.9688 -
  val_mean_absolute_error: 533.6780

930 Epoch 465/500
931 30/30 [=====] - 0s 2ms/step - loss: 22798.8145
  - mean_absolute_error: 111.8455 - val_loss: 388691.8438 -
  val_mean_absolute_error: 530.3013
```

```
932 Epoch 466/500
933 30/30 [=====] - 0s 2ms/step - loss: 27678.6855
      - mean_absolute_error: 125.8879 - val_loss: 424081.5625 -
      val_mean_absolute_error: 549.1024
934 Epoch 467/500
935 30/30 [=====] - 0s 2ms/step - val_loss: 427556.9375 -
      val_mean_absolute_error: 120.6175 - val_loss: 24935.9512
936 Epoch 468/500
937 30/30 [=====] - 0s 2ms/step - val_loss: 412018.9375 -
      val_mean_absolute_error: 113.5575 - val_loss: 24150.1836
938 Epoch 469/500
939 30/30 [=====] - 0s 2ms/step - val_loss: 427556.9375 -
      val_mean_absolute_error: 115.2733 - val_loss: 24528.7852
940 Epoch 470/500
941 30/30 [=====] - 0s 2ms/step - val_loss: 390507.1562 -
      val_mean_absolute_error: 541.5818
      - mean_absolute_error: 111.1875 - val_loss: 346068.8125 -
      val_mean_absolute_error: 490.6770
942 Epoch 471/500
943 30/30 [=====] - 0s 2ms/step - val_loss: 413307.4375 -
      - mean_absolute_error: 116.6122 - val_loss: 21880.4043
      - mean_absolute_error: 116.6122 - val_loss: 24539.5820
```

```
943 val_mean_absolute_error: 538.2878
944 Epoch 472/500
945 30/30 [=====] - 0s 2ms/step - Loss: 23751.4785
- mean_absolute_error: 115.7656 - val_loss: 350523.8750 -
val_mean_absolute_error: 482.5535
946 Epoch 473/500
947 30/30 [=====] - 0s 2ms/step - Loss: 26144.1680
- mean_absolute_error: 121.9232 - val_loss: 407419.8750 -
val_mean_absolute_error: 539.7112
948 Epoch 474/500
949 30/30 [=====] - 0s 2ms/step - Loss: 23083.2148
- mean_absolute_error: 114.5888 - val_loss: 356384.6875 -
val_mean_absolute_error: 495.5402
950 Epoch 475/500
951 30/30 [=====] - 0s 2ms/step - Loss: 24263.5840
- mean_absolute_error: 112.8924 - val_loss: 379006.3438 -
val_mean_absolute_error: 516.8287
952 Epoch 476/500
953 30/30 [=====] - 0s 2ms/step - Loss: 23816.8770
- mean_absolute_error: 115.8675 - val_loss: 430864.6562 -
val_mean_absolute_error: 554.2830
954 Epoch 477/500
955 30/30 [=====] - 0s 2ms/step - Loss: 23363.9766
```

```
955  - mean_absolute_error: 111.4865 - val_loss: 350060.0938 -
  val_mean_absolute_error: 490.3008
956 Epoch 478/500
957 30/30 [=====] - 0s 2ms/step - Loss: 24765.5840
  - mean_absolute_error: 119.2634 - val_loss: 363652.1250 -
  val_mean_absolute_error: 502.1465
958 Epoch 479/500
959 30/30 [=====] - 0s 2ms/step - Loss: 23945.6152
  - mean_absolute_error: 115.1920 - val_loss: 357276.0625 -
  val_mean_absolute_error: 502.6197
960 Epoch 480/500
961 30/30 [=====] - 0s 2ms/step - Loss: 20969.7988
  - mean_absolute_error: 110.5708 - val_loss: 347400.3750 -
  val_mean_absolute_error: 487.1383
962 Epoch 481/500
963 30/30 [=====] - 0s 2ms/step - Loss: 24927.3496
  - mean_absolute_error: 117.2996 - val_loss: 328921.2500 -
  val_mean_absolute_error: 476.6910
964 Epoch 482/500
965 30/30 [=====] - 0s 2ms/step - Loss: 23841.0430
  - mean_absolute_error: 110.6184 - val_loss: 344506.5000 -
  val_mean_absolute_error: 487.0551
966 Epoch 483/500
```

```
967 30/30 [=====] - 0s 2ms/step - loss: 20397.1074
  - mean_absolute_error: 104.4748 - val_loss: 368748.3750 -
val_mean_absolute_error: 505.1047
968 Epoch 484/500
969 30/30 [=====] - 0s 2ms/step - loss: 24613.7129
  - mean_absolute_error: 115.0057 - val_loss: 363079.0312 -
val_mean_absolute_error: 494.8479
970 Epoch 485/500
971 30/30 [=====] - 0s 2ms/step - loss: 23609.0215
  - mean_absolute_error: 116.0103 - val_loss: 332446.8438 -
val_mean_absolute_error: 475.9389
972 Epoch 486/500
973 30/30 [=====] - 0s 2ms/step - loss: 22221.6270
  - mean_absolute_error: 111.2393 - val_loss: 330778.6562 -
val_mean_absolute_error: 469.9221
974 Epoch 487/500
975 30/30 [=====] - 0s 2ms/step - loss: 22950.3691
  - mean_absolute_error: 113.3220 - val_loss: 442264.2500 -
val_mean_absolute_error: 563.2001
976 Epoch 488/500
977 30/30 [=====] - 0s 2ms/step - loss: 27045.9414
  - mean_absolute_error: 123.2197 - val_loss: 434398.9062 -
val_mean_absolute_error: 545.4500
```

```
978 Epoch 489/500
979 30/30 [=====] - 0s 2ms/step - loss: 22924.3105
    - mean_absolute_error: 114.6236 - val_loss: 392534.9688 -
    val_mean_absolute_error: 526.8378

980 Epoch 490/500
981 30/30 [=====] - 0s 2ms/step - loss: 24216.7207
    - mean_absolute_error: 116.4926 - val_loss: 339987.7188 -
    val_mean_absolute_error: 492.0941

982 Epoch 491/500
983 30/30 [=====] - 0s 2ms/step - loss: 25577.4453
    - mean_absolute_error: 114.7873 - val_loss: 463930.5625 -
    val_mean_absolute_error: 584.3856

984 Epoch 492/500
985 30/30 [=====] - 0s 2ms/step - loss: 29260.4395
    - mean_absolute_error: 130.9282 - val_loss: 357084.6875 -
    val_mean_absolute_error: 500.6417

986 Epoch 493/500
987 30/30 [=====] - 0s 2ms/step - loss: 22754.0605
    - mean_absolute_error: 112.7040 - val_loss: 376625.6562 -
    val_mean_absolute_error: 512.2443

988 Epoch 494/500
989 30/30 [=====] - 0s 2ms/step - loss: 23956.5723
    - mean_absolute_error: 114.2434 - val_loss: 317047.5312 -
```

```
989 val_mean_absolute_error: 466.5555
990 Epoch 495/500
991 30/30 [=====] - 0s 2ms/step - loss: 27923.1367
- mean_absolute_error: 124.9842 - val_loss: 337337.5938 -
val_mean_absolute_error: 478.4310
992 Epoch 496/500
993 30/30 [=====] - 0s 2ms/step - loss: 23942.7207
- mean_absolute_error: 117.3678 - val_loss: 351325.6875 -
val_mean_absolute_error: 494.3635
994 Epoch 497/500
995 30/30 [=====] - 0s 2ms/step - loss: 26025.1230
- mean_absolute_error: 121.0741 - val_loss: 356898.6250 -
val_mean_absolute_error: 506.2071
996 Epoch 498/500
997 30/30 [=====] - 0s 2ms/step - loss: 32357.5195
- mean_absolute_error: 137.2339 - val_loss: 384274.1562 -
val_mean_absolute_error: 522.2981
998 Epoch 499/500
999 30/30 [=====] - 0s 2ms/step - loss: 26297.5996
- mean_absolute_error: 123.7883 - val_loss: 393741.9375 -
val_mean_absolute_error: 533.6576
1000 Epoch 500/500
1001 30/30 [=====] - 0s 2ms/step - loss: 25862.0957
```

```

1001 - mean_absolute_error: 119.6065 - val_loss: 397249.5938 -
1002 val_mean_absolute_error: 528.4318
1003 30/30 [=====] - 0s 573us/step
1004 4/4 [=====] - 0s 667us/step
1005 Train Data Mean Absolute Error (MAE): 53.05400085449219
1006 Train Data Mean Absolute Percentage Error (MAPE): 0.01600000075995922
1007 Train Data Root Mean Squared Error (RMSE): 71.922
1008 Validation Data Mean Absolute Error (MAE): 528.4320068359375
1009 Validation Data Mean Absolute Percentage Error (MAPE): 0.
137999965429306
1010 Validation Data Root Mean Squared Error (RMSE): 630.277
1011 Testing Data Mean Absolute Error (MAE): 523.4190063476562
1012 Testing Data Mean Absolute Percentage Error (MAPE): 0.13199999928474426
1013 Testing Data Root Mean Squared Error (RMSE): 671.083
1014
1015
1016 Variable N Mean SD SE 95% Conf. Interval
1017 0 Close 935.0 3517.5543 649.7609 21.2495 3475.8521 3559.2565
1018 The Train Count is: 935
1019 The Train Max is: 4603.49
1020 The Train Min is: 2523.2563
1021 The Train Kurtosis is: -1.4251370947029027

```

1022 The Train Skew is: 0.2935589872556274
 1023 - - - - -

1024
 1025

	Variable	N	Mean	SD	SE	95% Conf.	Interval
1027 0	Close	116.0	3450.3736	559.6292	51.9603	3347.4503	3553.2969

1028 The Validation Count is: 116

1029 The Validation Max is: 4597.525

1030 The Validation Min is: 2523.9153

1031 The Validation Kurtosis is: -0.7673091616871024

1032 The Validation Skew is: 0.14599041846685223

1033 - - - - -

1034
 1035

	Variable	N	Mean	SD	SE	95% Conf.	Interval
1037 0	Close	117.0	3554.3375	561.3596	51.8977	3451.5475	3657.1275

1038 The Test Count is: 117

1039 The Test Max is: 4605.0405

1040 The Test Min is: 2532.4446

1041 The Test Kurtosis is: -1.0204225978635577

1042 The Test Skew is: -0.31937167640443004

```
1043  
1044 Process finished with exit code 0  
1045
```