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1 /usr/local/bin/python3.8 "/Users/surajvaddi/Desktop/TarPrint Full Journey/Machine Learning Code/Neural-Network-NO-test.py"
2 2020-09-04 00:29:55.863630: I tensorflow/core/platform/cpu_feature_guard.cc:142] This TensorFlow binary is optimized with oneAPI Deep Neural Network Library (oneDNN) to use the following CPU instructions in performance-critical operations: AVX2 FMA
3 To enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.
4 2020-09-04 00:29:55.873302: I tensorflow/compiler/xla/service/service.cc:168] XLA service 0x7fa3ca060ad0 initialized for platform Host (this does not guarantee that XLA will be used). Devices:
5 2020-09-04 00:29:55.873311: I tensorflow/compiler/xla/service/service.cc:176] StreamExecutor device (0): Host, Default Version
6 Epoch 1/350
7 136/136 [=====] - 0s 680us /step - loss: 1.5888 - accuracy: 0.3500
8 Epoch 2/350
9 136/136 [=====] - 0s 683us /step - loss: 1.3942 - accuracy: 0.5015
10 Epoch 3/350
11 136/136 [=====] - 0s 546us /step - loss: 1.0547 - accuracy: 0.6534
12 Epoch 4/350
13 136/136 [=====] - 0s 517us /step - loss: 0.7685 - accuracy: 0.7426
14 Epoch 5/350
15 136/136 [=====] - 0s 519us /step - loss: 0.6591 - accuracy: 0.7637
16 Epoch 6/350
17 136/136 [=====] - 0s 548us /step - loss: 0.6178 - accuracy: 0.7765
18 Epoch 7/350
19 136/136 [=====] - 0s 562us /step - loss: 0.5834 - accuracy: 0.7907
20 Epoch 8/350
21 136/136 [=====] - 0s 521us /step - loss: 0.5734 - accuracy: 0.7931
22 Epoch 9/350
23 136/136 [=====] - 0s 560us
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23 /step - loss: 0.5568 - accuracy: 0.8015
24 Epoch 10/350
25 136/136 [=====] - 0s 572us
    /step - loss: 0.5475 - accuracy: 0.7941
26 Epoch 11/350
27 136/136 [=====] - 0s 662us
    /step - loss: 0.5450 - accuracy: 0.8029
28 Epoch 12/350
29 136/136 [=====] - 0s 756us
    /step - loss: 0.5286 - accuracy: 0.8098
30 Epoch 13/350
31 136/136 [=====] - 0s 552us
    /step - loss: 0.5271 - accuracy: 0.8069
32 Epoch 14/350
33 136/136 [=====] - 0s 527us
    /step - loss: 0.5185 - accuracy: 0.8093
34 Epoch 15/350
35 136/136 [=====] - 0s 583us
    /step - loss: 0.5218 - accuracy: 0.8059
36 Epoch 16/350
37 136/136 [=====] - 0s 543us
    /step - loss: 0.5191 - accuracy: 0.8113
38 Epoch 17/350
39 136/136 [=====] - 0s 749us
    /step - loss: 0.5181 - accuracy: 0.8123
40 Epoch 18/350
41 136/136 [=====] - 0s 634us
    /step - loss: 0.4978 - accuracy: 0.8098
42 Epoch 19/350
43 136/136 [=====] - 0s 519us
    /step - loss: 0.5023 - accuracy: 0.8181
44 Epoch 20/350
45 136/136 [=====] - 0s 618us
    /step - loss: 0.4954 - accuracy: 0.8093
46 Epoch 21/350
47 136/136 [=====] - 0s 568us
    /step - loss: 0.4919 - accuracy: 0.8176
48 Epoch 22/350
49 136/136 [=====] - 0s 560us
    /step - loss: 0.4852 - accuracy: 0.8275
50 Epoch 23/350
51 136/136 [=====] - 0s 577us
    /step - loss: 0.4810 - accuracy: 0.8270
52 Epoch 24/350
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53 136/136 [=====] - 0s 515us
  /step - loss: 0.4811 - accuracy: 0.8221
54 Epoch 25/350
55 136/136 [=====] - 0s 567us
  /step - loss: 0.4749 - accuracy: 0.8230
56 Epoch 26/350
57 136/136 [=====] - 0s 575us
  /step - loss: 0.4770 - accuracy: 0.8284
58 Epoch 27/350
59 136/136 [=====] - 0s 521us
  /step - loss: 0.4712 - accuracy: 0.8324
60 Epoch 28/350
61 136/136 [=====] - 0s 590us
  /step - loss: 0.4631 - accuracy: 0.8289
62 Epoch 29/350
63 136/136 [=====] - 0s 550us
  /step - loss: 0.4576 - accuracy: 0.8328
64 Epoch 30/350
65 136/136 [=====] - 0s 513us
  /step - loss: 0.4613 - accuracy: 0.8333
66 Epoch 31/350
67 136/136 [=====] - 0s 569us
  /step - loss: 0.4567 - accuracy: 0.8407
68 Epoch 32/350
69 136/136 [=====] - 0s 572us
  /step - loss: 0.4635 - accuracy: 0.8275
70 Epoch 33/350
71 136/136 [=====] - 0s 516us
  /step - loss: 0.4645 - accuracy: 0.8309
72 Epoch 34/350
73 136/136 [=====] - 0s 570us
  /step - loss: 0.4510 - accuracy: 0.8358
74 Epoch 35/350
75 136/136 [=====] - 0s 549us
  /step - loss: 0.4474 - accuracy: 0.8343
76 Epoch 36/350
77 136/136 [=====] - 0s 530us
  /step - loss: 0.4415 - accuracy: 0.8358
78 Epoch 37/350
79 136/136 [=====] - 0s 690us
  /step - loss: 0.4522 - accuracy: 0.8314
80 Epoch 38/350
81 136/136 [=====] - 0s 628us
  /step - loss: 0.4519 - accuracy: 0.8275
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82 Epoch 39/350
83 136/136 [=====] - 0s
    562us/step - loss: 0.4390 - accuracy: 0.8373
84 Epoch 40/350
85 136/136 [=====] - 0s
    583us/step - loss: 0.4353 - accuracy: 0.8441
86 Epoch 41/350
87 136/136 [=====] - 0s
    509us/step - loss: 0.4343 - accuracy: 0.8456
88 Epoch 42/350
89 136/136 [=====] - 0s
    535us/step - loss: 0.4361 - accuracy: 0.8397
90 Epoch 43/350
91 136/136 [=====] - 0s
    581us/step - loss: 0.4466 - accuracy: 0.8348
92 Epoch 44/350
93 136/136 [=====] - 0s
    534us/step - loss: 0.4266 - accuracy: 0.8426
94 Epoch 45/350
95 136/136 [=====] - 0s
    641us/step - loss: 0.4445 - accuracy: 0.8377
96 Epoch 46/350
97 136/136 [=====] - 0s
    577us/step - loss: 0.4313 - accuracy: 0.8407
98 Epoch 47/350
99 136/136 [=====] - 0s
    542us/step - loss: 0.4292 - accuracy: 0.8441
100 Epoch 48/350
101 136/136 [=====] - 0s
    587us/step - loss: 0.4327 - accuracy: 0.8358
102 Epoch 49/350
103 136/136 [=====] - 0s
    545us/step - loss: 0.4206 - accuracy: 0.8461
104 Epoch 50/350
105 136/136 [=====] - 0s
    514us/step - loss: 0.4253 - accuracy: 0.8407
106 Epoch 51/350
107 136/136 [=====] - 0s
    558us/step - loss: 0.4219 - accuracy: 0.8490
108 Epoch 52/350
109 136/136 [=====] - 0s
    584us/step - loss: 0.4231 - accuracy: 0.8431
110 Epoch 53/350
111 136/136 [=====] - 0s
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111 515us/step - loss: 0.4208 - accuracy: 0.8373
112 Epoch 54/350
113 136/136 [=====] - 0s
    565us/step - loss: 0.4174 - accuracy: 0.8426
114 Epoch 55/350
115 136/136 [=====] - 0s
    551us/step - loss: 0.4390 - accuracy: 0.8363
116 Epoch 56/350
117 136/136 [=====] - 0s
    512us/step - loss: 0.4129 - accuracy: 0.8520
118 Epoch 57/350
119 136/136 [=====] - 0s
    558us/step - loss: 0.4181 - accuracy: 0.8392
120 Epoch 58/350
121 136/136 [=====] - 0s
    569us/step - loss: 0.4056 - accuracy: 0.8495
122 Epoch 59/350
123 136/136 [=====] - 0s
    520us/step - loss: 0.4220 - accuracy: 0.8485
124 Epoch 60/350
125 136/136 [=====] - 0s
    559us/step - loss: 0.4058 - accuracy: 0.8510
126 Epoch 61/350
127 136/136 [=====] - 0s
    553us/step - loss: 0.4063 - accuracy: 0.8510
128 Epoch 62/350
129 136/136 [=====] - 0s
    518us/step - loss: 0.4050 - accuracy: 0.8500
130 Epoch 63/350
131 136/136 [=====] - 0s
    563us/step - loss: 0.4113 - accuracy: 0.8500
132 Epoch 64/350
133 136/136 [=====] - 0s
    554us/step - loss: 0.4008 - accuracy: 0.8515
134 Epoch 65/350
135 136/136 [=====] - 0s
    531us/step - loss: 0.4119 - accuracy: 0.8446
136 Epoch 66/350
137 136/136 [=====] - 0s
    560us/step - loss: 0.4040 - accuracy: 0.8475
138 Epoch 67/350
139 136/136 [=====] - 0s
    557us/step - loss: 0.3977 - accuracy: 0.8520
140 Epoch 68/350
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141 136/136 [=====] - 0s
    510us/step - loss: 0.3990 - accuracy: 0.8451
142 Epoch 69/350
143 136/136 [=====] - 0s
    561us/step - loss: 0.3958 - accuracy: 0.8544
144 Epoch 70/350
145 136/136 [=====] - 0s
    557us/step - loss: 0.4147 - accuracy: 0.8441
146 Epoch 71/350
147 136/136 [=====] - 0s
    514us/step - loss: 0.3973 - accuracy: 0.8475
148 Epoch 72/350
149 136/136 [=====] - 0s
    579us/step - loss: 0.3942 - accuracy: 0.8559
150 Epoch 73/350
151 136/136 [=====] - 0s
    557us/step - loss: 0.3867 - accuracy: 0.8510
152 Epoch 74/350
153 136/136 [=====] - 0s
    512us/step - loss: 0.3989 - accuracy: 0.8549
154 Epoch 75/350
155 136/136 [=====] - 0s
    554us/step - loss: 0.3897 - accuracy: 0.8569
156 Epoch 76/350
157 136/136 [=====] - 0s
    558us/step - loss: 0.3851 - accuracy: 0.8525
158 Epoch 77/350
159 136/136 [=====] - 0s
    517us/step - loss: 0.3780 - accuracy: 0.8559
160 Epoch 78/350
161 136/136 [=====] - 0s
    578us/step - loss: 0.3824 - accuracy: 0.8490
162 Epoch 79/350
163 136/136 [=====] - 0s
    561us/step - loss: 0.3908 - accuracy: 0.8564
164 Epoch 80/350
165 136/136 [=====] - 0s
    513us/step - loss: 0.3812 - accuracy: 0.8603
166 Epoch 81/350
167 136/136 [=====] - 0s
    560us/step - loss: 0.3749 - accuracy: 0.8583
168 Epoch 82/350
169 136/136 [=====] - 0s
    556us/step - loss: 0.3771 - accuracy: 0.8598
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170 Epoch 83/350
171 136/136 [=====] - 0s
    513us/step - loss: 0.3840 - accuracy: 0.8564
172 Epoch 84/350
173 136/136 [=====] - 0s
    555us/step - loss: 0.3793 - accuracy: 0.8564
174 Epoch 85/350
175 136/136 [=====] - 0s
    581us/step - loss: 0.3806 - accuracy: 0.8608
176 Epoch 86/350
177 136/136 [=====] - 0s
    521us/step - loss: 0.3741 - accuracy: 0.8554
178 Epoch 87/350
179 136/136 [=====] - 0s
    562us/step - loss: 0.3696 - accuracy: 0.8637
180 Epoch 88/350
181 136/136 [=====] - 0s
    552us/step - loss: 0.3849 - accuracy: 0.8554
182 Epoch 89/350
183 136/136 [=====] - 0s
    516us/step - loss: 0.3673 - accuracy: 0.8662
184 Epoch 90/350
185 136/136 [=====] - 0s
    559us/step - loss: 0.3784 - accuracy: 0.8583
186 Epoch 91/350
187 136/136 [=====] - 0s
    579us/step - loss: 0.3809 - accuracy: 0.8593
188 Epoch 92/350
189 136/136 [=====] - 0s
    555us/step - loss: 0.3753 - accuracy: 0.8613
190 Epoch 93/350
191 136/136 [=====] - 0s
    583us/step - loss: 0.3701 - accuracy: 0.8627
192 Epoch 94/350
193 136/136 [=====] - 0s
    528us/step - loss: 0.3805 - accuracy: 0.8613
194 Epoch 95/350
195 136/136 [=====] - 0s
    540us/step - loss: 0.3721 - accuracy: 0.8603
196 Epoch 96/350
197 136/136 [=====] - 0s
    593us/step - loss: 0.3668 - accuracy: 0.8667
198 Epoch 97/350
199 136/136 [=====] - 0s
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199 544us/step - loss: 0.3722 - accuracy: 0.8637
200 Epoch 98/350
201 136/136 [=====] - 0s
    550us/step - loss: 0.3672 - accuracy: 0.8652
202 Epoch 99/350
203 136/136 [=====] - 0s
    618us/step - loss: 0.3737 - accuracy: 0.8598
204 Epoch 100/350
205 136/136 [=====] - 0s
    558us/step - loss: 0.3704 - accuracy: 0.8569
206 Epoch 101/350
207 136/136 [=====] - 0s
    531us/step - loss: 0.3677 - accuracy: 0.8662
208 Epoch 102/350
209 136/136 [=====] - 0s
    590us/step - loss: 0.3669 - accuracy: 0.8578
210 Epoch 103/350
211 136/136 [=====] - 0s
    548us/step - loss: 0.3591 - accuracy: 0.8672
212 Epoch 104/350
213 136/136 [=====] - 0s
    532us/step - loss: 0.3818 - accuracy: 0.8529
214 Epoch 105/350
215 136/136 [=====] - 0s
    585us/step - loss: 0.3665 - accuracy: 0.8667
216 Epoch 106/350
217 136/136 [=====] - 0s
    557us/step - loss: 0.3541 - accuracy: 0.8632
218 Epoch 107/350
219 136/136 [=====] - 0s
    515us/step - loss: 0.3561 - accuracy: 0.8647
220 Epoch 108/350
221 136/136 [=====] - 0s
    555us/step - loss: 0.3675 - accuracy: 0.8578
222 Epoch 109/350
223 136/136 [=====] - 0s
    568us/step - loss: 0.3566 - accuracy: 0.8618
224 Epoch 110/350
225 136/136 [=====] - 0s
    519us/step - loss: 0.3622 - accuracy: 0.8652
226 Epoch 111/350
227 136/136 [=====] - 0s
    593us/step - loss: 0.3598 - accuracy: 0.8662
228 Epoch 112/350
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229 136/136 [=====] - 0s
    559us/step - loss: 0.3636 - accuracy: 0.8603
230 Epoch 113/350
231 136/136 [=====] - 0s
    517us/step - loss: 0.3549 - accuracy: 0.8711
232 Epoch 114/350
233 136/136 [=====] - 0s
    560us/step - loss: 0.3558 - accuracy: 0.8686
234 Epoch 115/350
235 136/136 [=====] - 0s
    552us/step - loss: 0.3750 - accuracy: 0.8588
236 Epoch 116/350
237 136/136 [=====] - 0s
    534us/step - loss: 0.3543 - accuracy: 0.8706
238 Epoch 117/350
239 136/136 [=====] - 0s
    603us/step - loss: 0.3556 - accuracy: 0.8667
240 Epoch 118/350
241 136/136 [=====] - 0s
    541us/step - loss: 0.3541 - accuracy: 0.8725
242 Epoch 119/350
243 136/136 [=====] - 0s
    519us/step - loss: 0.3550 - accuracy: 0.8657
244 Epoch 120/350
245 136/136 [=====] - 0s
    620us/step - loss: 0.3559 - accuracy: 0.8647
246 Epoch 121/350
247 136/136 [=====] - 0s
    540us/step - loss: 0.3459 - accuracy: 0.8711
248 Epoch 122/350
249 136/136 [=====] - 0s
    516us/step - loss: 0.3593 - accuracy: 0.8667
250 Epoch 123/350
251 136/136 [=====] - 0s
    566us/step - loss: 0.3497 - accuracy: 0.8740
252 Epoch 124/350
253 136/136 [=====] - 0s
    572us/step - loss: 0.3568 - accuracy: 0.8627
254 Epoch 125/350
255 136/136 [=====] - 0s
    514us/step - loss: 0.3504 - accuracy: 0.8745
256 Epoch 126/350
257 136/136 [=====] - 0s
    564us/step - loss: 0.3540 - accuracy: 0.8642
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258 Epoch 127/350
259 136/136 [=====] - 0s
    553us/step - loss: 0.3548 - accuracy: 0.8657
260 Epoch 128/350
261 136/136 [=====] - 0s
    513us/step - loss: 0.3532 - accuracy: 0.8711
262 Epoch 129/350
263 136/136 [=====] - 0s
    563us/step - loss: 0.3552 - accuracy: 0.8642
264 Epoch 130/350
265 136/136 [=====] - 0s
    554us/step - loss: 0.3447 - accuracy: 0.8745
266 Epoch 131/350
267 136/136 [=====] - 0s
    536us/step - loss: 0.3423 - accuracy: 0.8686
268 Epoch 132/350
269 136/136 [=====] - 0s
    572us/step - loss: 0.3405 - accuracy: 0.8701
270 Epoch 133/350
271 136/136 [=====] - 0s
    602us/step - loss: 0.3486 - accuracy: 0.8735
272 Epoch 134/350
273 136/136 [=====] - 0s
    540us/step - loss: 0.3405 - accuracy: 0.8755
274 Epoch 135/350
275 136/136 [=====] - 0s
    600us/step - loss: 0.3407 - accuracy: 0.8721
276 Epoch 136/350
277 136/136 [=====] - 0s
    552us/step - loss: 0.3462 - accuracy: 0.8691
278 Epoch 137/350
279 136/136 [=====] - 0s
    547us/step - loss: 0.3432 - accuracy: 0.8672
280 Epoch 138/350
281 136/136 [=====] - 0s
    587us/step - loss: 0.3383 - accuracy: 0.8716
282 Epoch 139/350
283 136/136 [=====] - 0s
    533us/step - loss: 0.3537 - accuracy: 0.8686
284 Epoch 140/350
285 136/136 [=====] - 0s
    511us/step - loss: 0.3532 - accuracy: 0.8623
286 Epoch 141/350
287 136/136 [=====] - 0s
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287 560us/step - loss: 0.3497 - accuracy: 0.8647
288 Epoch 142/350
289 136/136 [=====] - 0s
    554us/step - loss: 0.3458 - accuracy: 0.8662
290 Epoch 143/350
291 136/136 [=====] - 0s
    518us/step - loss: 0.3358 - accuracy: 0.8765
292 Epoch 144/350
293 136/136 [=====] - 0s
    602us/step - loss: 0.3491 - accuracy: 0.8667
294 Epoch 145/350
295 136/136 [=====] - 0s
    597us/step - loss: 0.3515 - accuracy: 0.8662
296 Epoch 146/350
297 136/136 [=====] - 0s
    525us/step - loss: 0.3377 - accuracy: 0.8706
298 Epoch 147/350
299 136/136 [=====] - 0s
    585us/step - loss: 0.3430 - accuracy: 0.8745
300 Epoch 148/350
301 136/136 [=====] - 0s
    531us/step - loss: 0.3409 - accuracy: 0.8696
302 Epoch 149/350
303 136/136 [=====] - 0s
    513us/step - loss: 0.3345 - accuracy: 0.8745
304 Epoch 150/350
305 136/136 [=====] - 0s
    577us/step - loss: 0.3586 - accuracy: 0.8618
306 Epoch 151/350
307 136/136 [=====] - 0s
    571us/step - loss: 0.3447 - accuracy: 0.8667
308 Epoch 152/350
309 136/136 [=====] - 0s
    514us/step - loss: 0.3356 - accuracy: 0.8711
310 Epoch 153/350
311 136/136 [=====] - 0s
    561us/step - loss: 0.3343 - accuracy: 0.8760
312 Epoch 154/350
313 136/136 [=====] - 0s
    555us/step - loss: 0.3466 - accuracy: 0.8730
314 Epoch 155/350
315 136/136 [=====] - 0s
    514us/step - loss: 0.3356 - accuracy: 0.8721
316 Epoch 156/350
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317 136/136 [=====] - 0s
  564us/step - loss: 0.3387 - accuracy: 0.8770
318 Epoch 157/350
319 136/136 [=====] - 0s
  592us/step - loss: 0.3409 - accuracy: 0.8735
320 Epoch 158/350
321 136/136 [=====] - 0s
  518us/step - loss: 0.3288 - accuracy: 0.8750
322 Epoch 159/350
323 136/136 [=====] - 0s
  564us/step - loss: 0.3365 - accuracy: 0.8740
324 Epoch 160/350
325 136/136 [=====] - 0s
  553us/step - loss: 0.3340 - accuracy: 0.8775
326 Epoch 161/350
327 136/136 [=====] - 0s
  513us/step - loss: 0.3448 - accuracy: 0.8735
328 Epoch 162/350
329 136/136 [=====] - 0s
  558us/step - loss: 0.3354 - accuracy: 0.8770
330 Epoch 163/350
331 136/136 [=====] - 0s
  568us/step - loss: 0.3279 - accuracy: 0.8824
332 Epoch 164/350
333 136/136 [=====] - 0s
  513us/step - loss: 0.3411 - accuracy: 0.8740
334 Epoch 165/350
335 136/136 [=====] - 0s
  564us/step - loss: 0.3438 - accuracy: 0.8711
336 Epoch 166/350
337 136/136 [=====] - 0s
  554us/step - loss: 0.3382 - accuracy: 0.8701
338 Epoch 167/350
339 136/136 [=====] - 0s
  512us/step - loss: 0.3231 - accuracy: 0.8775
340 Epoch 168/350
341 136/136 [=====] - 0s
  562us/step - loss: 0.3392 - accuracy: 0.8696
342 Epoch 169/350
343 136/136 [=====] - 0s
  548us/step - loss: 0.3317 - accuracy: 0.8750
344 Epoch 170/350
345 136/136 [=====] - 0s
  533us/step - loss: 0.3290 - accuracy: 0.8716
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346 Epoch 171/350
347 136/136 [=====] - 0s
    558us/step - loss: 0.3267 - accuracy: 0.8760
348 Epoch 172/350
349 136/136 [=====] - 0s
    554us/step - loss: 0.3407 - accuracy: 0.8750
350 Epoch 173/350
351 136/136 [=====] - 0s
    512us/step - loss: 0.3351 - accuracy: 0.8775
352 Epoch 174/350
353 136/136 [=====] - 0s
    561us/step - loss: 0.3172 - accuracy: 0.8824
354 Epoch 175/350
355 136/136 [=====] - 0s
    559us/step - loss: 0.3295 - accuracy: 0.8779
356 Epoch 176/350
357 136/136 [=====] - 0s
    516us/step - loss: 0.3245 - accuracy: 0.8755
358 Epoch 177/350
359 136/136 [=====] - 0s
    577us/step - loss: 0.3308 - accuracy: 0.8760
360 Epoch 178/350
361 136/136 [=====] - 0s
    553us/step - loss: 0.3216 - accuracy: 0.8755
362 Epoch 179/350
363 136/136 [=====] - 0s
    514us/step - loss: 0.3251 - accuracy: 0.8770
364 Epoch 180/350
365 136/136 [=====] - 0s
    566us/step - loss: 0.3230 - accuracy: 0.8833
366 Epoch 181/350
367 136/136 [=====] - 0s
    552us/step - loss: 0.3173 - accuracy: 0.8819
368 Epoch 182/350
369 136/136 [=====] - 0s
    515us/step - loss: 0.3413 - accuracy: 0.8755
370 Epoch 183/350
371 136/136 [=====] - 0s
    579us/step - loss: 0.3204 - accuracy: 0.8824
372 Epoch 184/350
373 136/136 [=====] - 0s
    573us/step - loss: 0.3253 - accuracy: 0.8779
374 Epoch 185/350
375 136/136 [=====] - 0s
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375 516us/step - loss: 0.3241 - accuracy: 0.8789
376 Epoch 186/350
377 136/136 [=====] - 0s
      560us/step - loss: 0.3258 - accuracy: 0.8799
378 Epoch 187/350
379 136/136 [=====] - 0s
      554us/step - loss: 0.3188 - accuracy: 0.8804
380 Epoch 188/350
381 136/136 [=====] - 0s
      512us/step - loss: 0.3211 - accuracy: 0.8784
382 Epoch 189/350
383 136/136 [=====] - 0s
      562us/step - loss: 0.3328 - accuracy: 0.8765
384 Epoch 190/350
385 136/136 [=====] - 0s
      584us/step - loss: 0.3341 - accuracy: 0.8735
386 Epoch 191/350
387 136/136 [=====] - 0s
      511us/step - loss: 0.3287 - accuracy: 0.8706
388 Epoch 192/350
389 136/136 [=====] - 0s
      561us/step - loss: 0.3219 - accuracy: 0.8745
390 Epoch 193/350
391 136/136 [=====] - 0s
      553us/step - loss: 0.3209 - accuracy: 0.8804
392 Epoch 194/350
393 136/136 [=====] - 0s
      509us/step - loss: 0.3150 - accuracy: 0.8789
394 Epoch 195/350
395 136/136 [=====] - 0s
      554us/step - loss: 0.3205 - accuracy: 0.8784
396 Epoch 196/350
397 136/136 [=====] - 0s
      562us/step - loss: 0.3278 - accuracy: 0.8725
398 Epoch 197/350
399 136/136 [=====] - 0s
      535us/step - loss: 0.3242 - accuracy: 0.8799
400 Epoch 198/350
401 136/136 [=====] - 0s
      565us/step - loss: 0.3228 - accuracy: 0.8770
402 Epoch 199/350
403 136/136 [=====] - 0s
      556us/step - loss: 0.3192 - accuracy: 0.8789
404 Epoch 200/350
```

```
405 136/136 [=====] - 0s
    514us/step - loss: 0.3161 - accuracy: 0.8770
406 Epoch 201/350
407 136/136 [=====] - 0s
    579us/step - loss: 0.3252 - accuracy: 0.8745
408 Epoch 202/350
409 136/136 [=====] - 0s
    574us/step - loss: 0.3020 - accuracy: 0.8833
410 Epoch 203/350
411 136/136 [=====] - 0s
    553us/step - loss: 0.3169 - accuracy: 0.8814
412 Epoch 204/350
413 136/136 [=====] - 0s
    567us/step - loss: 0.3286 - accuracy: 0.8721
414 Epoch 205/350
415 136/136 [=====] - 0s
    533us/step - loss: 0.3170 - accuracy: 0.8760
416 Epoch 206/350
417 136/136 [=====] - 0s
    509us/step - loss: 0.3107 - accuracy: 0.8809
418 Epoch 207/350
419 136/136 [=====] - 0s
    557us/step - loss: 0.3171 - accuracy: 0.8794
420 Epoch 208/350
421 136/136 [=====] - 0s
    557us/step - loss: 0.3142 - accuracy: 0.8804
422 Epoch 209/350
423 136/136 [=====] - 0s
    508us/step - loss: 0.3165 - accuracy: 0.8809
424 Epoch 210/350
425 136/136 [=====] - 0s
    577us/step - loss: 0.3208 - accuracy: 0.8794
426 Epoch 211/350
427 136/136 [=====] - 0s
    562us/step - loss: 0.3052 - accuracy: 0.8828
428 Epoch 212/350
429 136/136 [=====] - 0s
    542us/step - loss: 0.3165 - accuracy: 0.8838
430 Epoch 213/350
431 136/136 [=====] - 0s
    586us/step - loss: 0.3191 - accuracy: 0.8809
432 Epoch 214/350
433 136/136 [=====] - 0s
    535us/step - loss: 0.3181 - accuracy: 0.8838
```

```
434 Epoch 215/350
435 136/136 [=====] - 0s
      511us/step - loss: 0.3188 - accuracy: 0.8838
436 Epoch 216/350
437 136/136 [=====] - 0s
      575us/step - loss: 0.3118 - accuracy: 0.8838
438 Epoch 217/350
439 136/136 [=====] - 0s
      568us/step - loss: 0.3132 - accuracy: 0.8804
440 Epoch 218/350
441 136/136 [=====] - 0s
      544us/step - loss: 0.3094 - accuracy: 0.8824
442 Epoch 219/350
443 136/136 [=====] - 0s
      605us/step - loss: 0.3125 - accuracy: 0.8814
444 Epoch 220/350
445 136/136 [=====] - 0s
      546us/step - loss: 0.3208 - accuracy: 0.8730
446 Epoch 221/350
447 136/136 [=====] - 0s
      509us/step - loss: 0.2924 - accuracy: 0.8922
448 Epoch 222/350
449 136/136 [=====] - 0s
      562us/step - loss: 0.3122 - accuracy: 0.8809
450 Epoch 223/350
451 136/136 [=====] - 0s
      584us/step - loss: 0.3072 - accuracy: 0.8838
452 Epoch 224/350
453 136/136 [=====] - 0s
      510us/step - loss: 0.3046 - accuracy: 0.8858
454 Epoch 225/350
455 136/136 [=====] - 0s
      557us/step - loss: 0.3027 - accuracy: 0.8887
456 Epoch 226/350
457 136/136 [=====] - 0s
      552us/step - loss: 0.3059 - accuracy: 0.8833
458 Epoch 227/350
459 136/136 [=====] - 0s
      508us/step - loss: 0.3022 - accuracy: 0.8877
460 Epoch 228/350
461 136/136 [=====] - 0s
      586us/step - loss: 0.3046 - accuracy: 0.8794
462 Epoch 229/350
463 136/136 [=====] - 0s
```

```
463 599us/step - loss: 0.3089 - accuracy: 0.8843
464 Epoch 230/350
465 136/136 [=====] - 0s
    506us/step - loss: 0.3146 - accuracy: 0.8848
466 Epoch 231/350
467 136/136 [=====] - 0s
    589us/step - loss: 0.3027 - accuracy: 0.8863
468 Epoch 232/350
469 136/136 [=====] - 0s
    563us/step - loss: 0.2993 - accuracy: 0.8877
470 Epoch 233/350
471 136/136 [=====] - 0s
    515us/step - loss: 0.3069 - accuracy: 0.8848
472 Epoch 234/350
473 136/136 [=====] - 0s
    563us/step - loss: 0.3019 - accuracy: 0.8863
474 Epoch 235/350
475 136/136 [=====] - 0s
    552us/step - loss: 0.2987 - accuracy: 0.8838
476 Epoch 236/350
477 136/136 [=====] - 0s
    529us/step - loss: 0.3090 - accuracy: 0.8789
478 Epoch 237/350
479 136/136 [=====] - 0s
    567us/step - loss: 0.3139 - accuracy: 0.8819
480 Epoch 238/350
481 136/136 [=====] - 0s
    554us/step - loss: 0.3088 - accuracy: 0.8799
482 Epoch 239/350
483 136/136 [=====] - 0s
    512us/step - loss: 0.3040 - accuracy: 0.8799
484 Epoch 240/350
485 136/136 [=====] - 0s
    560us/step - loss: 0.2973 - accuracy: 0.8873
486 Epoch 241/350
487 136/136 [=====] - 0s
    555us/step - loss: 0.3030 - accuracy: 0.8828
488 Epoch 242/350
489 136/136 [=====] - 0s
    511us/step - loss: 0.2926 - accuracy: 0.8873
490 Epoch 243/350
491 136/136 [=====] - 0s
    578us/step - loss: 0.2978 - accuracy: 0.8868
492 Epoch 244/350
```

```
493 136/136 [=====] - 0s
    555us/step - loss: 0.3114 - accuracy: 0.8819
494 Epoch 245/350
495 136/136 [=====] - 0s
    511us/step - loss: 0.3006 - accuracy: 0.8858
496 Epoch 246/350
497 136/136 [=====] - 0s
    555us/step - loss: 0.3141 - accuracy: 0.8809
498 Epoch 247/350
499 136/136 [=====] - 0s
    554us/step - loss: 0.2954 - accuracy: 0.8863
500 Epoch 248/350
501 136/136 [=====] - 0s
    512us/step - loss: 0.3002 - accuracy: 0.8877
502 Epoch 249/350
503 136/136 [=====] - 0s
    576us/step - loss: 0.2948 - accuracy: 0.8882
504 Epoch 250/350
505 136/136 [=====] - 0s
    569us/step - loss: 0.3005 - accuracy: 0.8809
506 Epoch 251/350
507 136/136 [=====] - 0s
    510us/step - loss: 0.2946 - accuracy: 0.8887
508 Epoch 252/350
509 136/136 [=====] - 0s
    555us/step - loss: 0.2978 - accuracy: 0.8887
510 Epoch 253/350
511 136/136 [=====] - 0s
    553us/step - loss: 0.2945 - accuracy: 0.8917
512 Epoch 254/350
513 136/136 [=====] - 0s
    511us/step - loss: 0.2940 - accuracy: 0.8863
514 Epoch 255/350
515 136/136 [=====] - 0s
    559us/step - loss: 0.2970 - accuracy: 0.8892
516 Epoch 256/350
517 136/136 [=====] - 0s
    588us/step - loss: 0.2961 - accuracy: 0.8897
518 Epoch 257/350
519 136/136 [=====] - 0s
    506us/step - loss: 0.2831 - accuracy: 0.8936
520 Epoch 258/350
521 136/136 [=====] - 0s
    564us/step - loss: 0.2976 - accuracy: 0.8882
```

```
522 Epoch 259/350
523 136/136 [=====] - 0s
    554us/step - loss: 0.2942 - accuracy: 0.8873
524 Epoch 260/350
525 136/136 [=====] - 0s
    510us/step - loss: 0.2839 - accuracy: 0.8946
526 Epoch 261/350
527 136/136 [=====] - 0s
    573us/step - loss: 0.2855 - accuracy: 0.8892
528 Epoch 262/350
529 136/136 [=====] - 0s
    611us/step - loss: 0.2903 - accuracy: 0.8980
530 Epoch 263/350
531 136/136 [=====] - 0s
    510us/step - loss: 0.2921 - accuracy: 0.8877
532 Epoch 264/350
533 136/136 [=====] - 0s
    556us/step - loss: 0.2938 - accuracy: 0.8863
534 Epoch 265/350
535 136/136 [=====] - 0s
    553us/step - loss: 0.2857 - accuracy: 0.8931
536 Epoch 266/350
537 136/136 [=====] - 0s
    510us/step - loss: 0.2945 - accuracy: 0.8873
538 Epoch 267/350
539 136/136 [=====] - 0s
    555us/step - loss: 0.2967 - accuracy: 0.8804
540 Epoch 268/350
541 136/136 [=====] - 0s
    556us/step - loss: 0.2851 - accuracy: 0.8917
542 Epoch 269/350
543 136/136 [=====] - 0s
    534us/step - loss: 0.2860 - accuracy: 0.8966
544 Epoch 270/350
545 136/136 [=====] - 0s
    565us/step - loss: 0.2875 - accuracy: 0.8882
546 Epoch 271/350
547 136/136 [=====] - 0s
    552us/step - loss: 0.2910 - accuracy: 0.8843
548 Epoch 272/350
549 136/136 [=====] - 0s
    513us/step - loss: 0.2986 - accuracy: 0.8863
550 Epoch 273/350
551 136/136 [=====] - 0s
```

```
551 571us/step - loss: 0.2959 - accuracy: 0.8926
552 Epoch 274/350
553 136/136 [=====] - 0s
    551us/step - loss: 0.2932 - accuracy: 0.8917
554 Epoch 275/350
555 136/136 [=====] - 0s
    509us/step - loss: 0.2910 - accuracy: 0.8946
556 Epoch 276/350
557 136/136 [=====] - 0s
    571us/step - loss: 0.2857 - accuracy: 0.8946
558 Epoch 277/350
559 136/136 [=====] - 0s
    555us/step - loss: 0.2906 - accuracy: 0.8907
560 Epoch 278/350
561 136/136 [=====] - 0s
    511us/step - loss: 0.2838 - accuracy: 0.8931
562 Epoch 279/350
563 136/136 [=====] - 0s
    558us/step - loss: 0.2737 - accuracy: 0.8966
564 Epoch 280/350
565 136/136 [=====] - 0s
    551us/step - loss: 0.2863 - accuracy: 0.8902
566 Epoch 281/350
567 136/136 [=====] - 0s
    510us/step - loss: 0.2896 - accuracy: 0.8902
568 Epoch 282/350
569 136/136 [=====] - 0s
    572us/step - loss: 0.2984 - accuracy: 0.8887
570 Epoch 283/350
571 136/136 [=====] - 0s
    571us/step - loss: 0.2858 - accuracy: 0.8931
572 Epoch 284/350
573 136/136 [=====] - 0s
    511us/step - loss: 0.2816 - accuracy: 0.8931
574 Epoch 285/350
575 136/136 [=====] - 0s
    558us/step - loss: 0.2857 - accuracy: 0.8941
576 Epoch 286/350
577 136/136 [=====] - 0s
    557us/step - loss: 0.2856 - accuracy: 0.8897
578 Epoch 287/350
579 136/136 [=====] - 0s
    511us/step - loss: 0.2851 - accuracy: 0.8912
580 Epoch 288/350
```

```
581 136/136 [=====] - 0s
    553us/step - loss: 0.2885 - accuracy: 0.8917
582 Epoch 289/350
583 136/136 [=====] - 0s
    570us/step - loss: 0.2836 - accuracy: 0.8941
584 Epoch 290/350
585 136/136 [=====] - 0s
    508us/step - loss: 0.2773 - accuracy: 0.9005
586 Epoch 291/350
587 136/136 [=====] - 0s
    561us/step - loss: 0.2787 - accuracy: 0.8912
588 Epoch 292/350
589 136/136 [=====] - 0s
    545us/step - loss: 0.2788 - accuracy: 0.8907
590 Epoch 293/350
591 136/136 [=====] - 0s
    513us/step - loss: 0.2756 - accuracy: 0.8936
592 Epoch 294/350
593 136/136 [=====] - 0s
    553us/step - loss: 0.2890 - accuracy: 0.8873
594 Epoch 295/350
595 136/136 [=====] - 0s
    558us/step - loss: 0.2781 - accuracy: 0.9000
596 Epoch 296/350
597 136/136 [=====] - 0s
    527us/step - loss: 0.2839 - accuracy: 0.8931
598 Epoch 297/350
599 136/136 [=====] - 0s
    560us/step - loss: 0.2765 - accuracy: 0.8917
600 Epoch 298/350
601 136/136 [=====] - 0s
    551us/step - loss: 0.2831 - accuracy: 0.8951
602 Epoch 299/350
603 136/136 [=====] - 0s
    529us/step - loss: 0.2775 - accuracy: 0.8985
604 Epoch 300/350
605 136/136 [=====] - 0s
    597us/step - loss: 0.2773 - accuracy: 0.8936
606 Epoch 301/350
607 136/136 [=====] - 0s
    559us/step - loss: 0.2725 - accuracy: 0.8941
608 Epoch 302/350
609 136/136 [=====] - 0s
    523us/step - loss: 0.2747 - accuracy: 0.8951
```

```
610 Epoch 303/350
611 136/136 [=====] - 0s
      565us/step - loss: 0.2877 - accuracy: 0.8917
612 Epoch 304/350
613 136/136 [=====] - 0s
      549us/step - loss: 0.2765 - accuracy: 0.8956
614 Epoch 305/350
615 136/136 [=====] - 0s
      509us/step - loss: 0.2686 - accuracy: 0.8975
616 Epoch 306/350
617 136/136 [=====] - 0s
      590us/step - loss: 0.2695 - accuracy: 0.8971
618 Epoch 307/350
619 136/136 [=====] - 0s
      581us/step - loss: 0.2742 - accuracy: 0.8941
620 Epoch 308/350
621 136/136 [=====] - 0s
      516us/step - loss: 0.2800 - accuracy: 0.8863
622 Epoch 309/350
623 136/136 [=====] - 0s
      586us/step - loss: 0.2766 - accuracy: 0.8941
624 Epoch 310/350
625 136/136 [=====] - 0s
      566us/step - loss: 0.2651 - accuracy: 0.9034
626 Epoch 311/350
627 136/136 [=====] - 0s
      509us/step - loss: 0.2774 - accuracy: 0.8897
628 Epoch 312/350
629 136/136 [=====] - 0s
      559us/step - loss: 0.2906 - accuracy: 0.8951
630 Epoch 313/350
631 136/136 [=====] - 0s
      548us/step - loss: 0.2670 - accuracy: 0.9020
632 Epoch 314/350
633 136/136 [=====] - 0s
      508us/step - loss: 0.2783 - accuracy: 0.8946
634 Epoch 315/350
635 136/136 [=====] - 0s
      557us/step - loss: 0.2782 - accuracy: 0.8946
636 Epoch 316/350
637 136/136 [=====] - 0s
      622us/step - loss: 0.2710 - accuracy: 0.9005
638 Epoch 317/350
639 136/136 [=====] - 0s
```

```
639 523us/step - loss: 0.2822 - accuracy: 0.8936
640 Epoch 318/350
641 136/136 [=====] - 0s
    563us/step - loss: 0.2678 - accuracy: 0.8956
642 Epoch 319/350
643 136/136 [=====] - 0s
    544us/step - loss: 0.2727 - accuracy: 0.8961
644 Epoch 320/350
645 136/136 [=====] - 0s
    512us/step - loss: 0.2720 - accuracy: 0.8990
646 Epoch 321/350
647 136/136 [=====] - 0s
    557us/step - loss: 0.2765 - accuracy: 0.8922
648 Epoch 322/350
649 136/136 [=====] - 0s
    569us/step - loss: 0.2689 - accuracy: 0.8975
650 Epoch 323/350
651 136/136 [=====] - 0s
    511us/step - loss: 0.2705 - accuracy: 0.8946
652 Epoch 324/350
653 136/136 [=====] - 0s
    558us/step - loss: 0.2650 - accuracy: 0.9000
654 Epoch 325/350
655 136/136 [=====] - 0s
    557us/step - loss: 0.2791 - accuracy: 0.8946
656 Epoch 326/350
657 136/136 [=====] - 0s
    510us/step - loss: 0.2790 - accuracy: 0.8951
658 Epoch 327/350
659 136/136 [=====] - 0s
    573us/step - loss: 0.2665 - accuracy: 0.8946
660 Epoch 328/350
661 136/136 [=====] - 0s
    592us/step - loss: 0.2718 - accuracy: 0.8980
662 Epoch 329/350
663 136/136 [=====] - 0s
    534us/step - loss: 0.2712 - accuracy: 0.8946
664 Epoch 330/350
665 136/136 [=====] - 0s
    574us/step - loss: 0.2674 - accuracy: 0.8961
666 Epoch 331/350
667 136/136 [=====] - 0s
    571us/step - loss: 0.2726 - accuracy: 0.8907
668 Epoch 332/350
```

```
669 136/136 [=====] - 0s
    535us/step - loss: 0.2730 - accuracy: 0.8975
670 Epoch 333/350
671 136/136 [=====] - 0s
    590us/step - loss: 0.2690 - accuracy: 0.9000
672 Epoch 334/350
673 136/136 [=====] - 0s
    542us/step - loss: 0.2583 - accuracy: 0.9039
674 Epoch 335/350
675 136/136 [=====] - 0s
    527us/step - loss: 0.2728 - accuracy: 0.8985
676 Epoch 336/350
677 136/136 [=====] - 0s
    596us/step - loss: 0.2695 - accuracy: 0.8980
678 Epoch 337/350
679 136/136 [=====] - 0s
    555us/step - loss: 0.2761 - accuracy: 0.8951
680 Epoch 338/350
681 136/136 [=====] - 0s
    507us/step - loss: 0.2723 - accuracy: 0.8931
682 Epoch 339/350
683 136/136 [=====] - 0s
    558us/step - loss: 0.2633 - accuracy: 0.8971
684 Epoch 340/350
685 136/136 [=====] - 0s
    556us/step - loss: 0.2706 - accuracy: 0.8995
686 Epoch 341/350
687 136/136 [=====] - 0s
    511us/step - loss: 0.2606 - accuracy: 0.9015
688 Epoch 342/350
689 136/136 [=====] - 0s
    605us/step - loss: 0.2780 - accuracy: 0.8877
690 Epoch 343/350
691 136/136 [=====] - 0s
    578us/step - loss: 0.2703 - accuracy: 0.8966
692 Epoch 344/350
693 136/136 [=====] - 0s
    503us/step - loss: 0.2645 - accuracy: 0.8961
694 Epoch 345/350
695 136/136 [=====] - 0s
    571us/step - loss: 0.2615 - accuracy: 0.8975
696 Epoch 346/350
697 136/136 [=====] - 0s
    587us/step - loss: 0.2656 - accuracy: 0.8946
```

```
698 Epoch 347/350
699 136/136 [=====] - 0s
    516us/step - loss: 0.2623 - accuracy: 0.9044
700 Epoch 348/350
701 136/136 [=====] - 0s
    581us/step - loss: 0.2711 - accuracy: 0.8926
702 Epoch 349/350
703 136/136 [=====] - 0s
    569us/step - loss: 0.2564 - accuracy: 0.9034
704 Epoch 350/350
705 136/136 [=====] - 0s
    506us/step - loss: 0.2598 - accuracy: 0.8985
706 WARNING:tensorflow:From /Library/Frameworks/Python
.framework/Versions/3.8/lib/python3.8/site-
packages/tensorflow/python/training/tracking/
tracking.py:111: Model.state_updates (from
tensorflow.python.keras.engine.training) is
deprecated and will be removed in a future version
.
707 Instructions for updating:
708 This property should not be used in TensorFlow 2.0
, as updates are applied automatically.
709 2020-09-04 00:30:23.134923: W tensorflow/python/
util/util.cc:348] Sets are not currently
considered sequences, but this may change in the
future, so consider avoiding using them.
710 WARNING:tensorflow:From /Library/Frameworks/Python
.framework/Versions/3.8/lib/python3.8/site-
packages/tensorflow/python/training/tracking/
tracking.py:111: Layer.updates (from tensorflow.
python.keras.engine.base_layer) is deprecated and
will be removed in a future version.
711 Instructions for updating:
712 This property should not be used in TensorFlow 2.0
, as updates are applied automatically.
713
714 Process finished with exit code 0
715
```