```
 1 C:\Users\mail2\AppData\Local\Programs\Python\Python38
   \python.exe "C:/Users/mail2/Documents/Nauka/PJA 2021/
   SEMESTR VII/NAI/Projekty/Neural_Network/Penguin/main.
   py"
 2 {'Adelie': 0, 'Gentoo': 1, 'Chinstrap': 2}
 3 Fold...
 4 Epoch 1/500
 5 6/6 [==============================] - 1s 25ms/step
    - loss: 0.7368 - acc: 0.6721 - val_loss: 0.5511 -
   val_acc: 0.6739
 6 Epoch 2/500
 7 6/6 [==============================] - 0s 5ms/step -
   loss: 0.5663 - acc: 0.6831 - val_loss: 0.4315 -
   val_acc: 0.8696
 8 Epoch 3/500
 9 6/6 [==============================] - 0s 6ms/step -
   loss: 0.4568 - acc: 0.8251 - val_loss: 0.3629 -
   val_acc: 0.8043
10 Epoch 4/500
11 6/6 [==============================] - 0s 6ms/step -
   loss: 0.4111 - acc: 0.8197 - val_loss: 0.2970 -
   val_acc: 0.9891
12 Epoch 5/500
13 6/6 [==============================] - 0s 3ms/step -
   loss: 0.3308 - acc: 0.8852 - val_loss: 0.2511 -
   val_acc: 0.9891
14 Epoch 6/500
15 6/6 [==============================] - 0s 3ms/step -
   loss: 0.2968 - acc: 0.9180 - val_loss: 0.2096 -
   val_acc: 1.0000
16 Epoch 7/500
17 6/6 [==============================] - 0s 3ms/step -
   loss: 0.2630 - acc: 0.9180 - val_loss: 0.1806 -
   val_acc: 0.9891
18 Epoch 8/500
19 6/6 [==============================] - 0s 7ms/step -
   loss: 0.2182 - acc: 0.9727 - val_loss: 0.1466 -
   val_acc: 0.9891
20 Epoch 9/500
21 6/6 [==============================] - 0s 6ms/step -
   loss: 0.2073 - acc: 0.9563 - val_loss: 0.1363 -
```

```
21 val_acc: 0.9891
22 Epoch 10/500
23 6/6 [==============================] - 0s 6ms/step -
   loss: 0.1681 - acc: 0.9781 - val_loss: 0.1214 -
   val_acc: 0.9783
24 Epoch 11/500
25 6/6 [==============================] - 0s 6ms/step -
   loss: 0.1365 - acc: 0.9891 - val_loss: 0.1011 -
   val_acc: 0.9891
26 Epoch 12/500
27 6/6 [==============================] - 0s 3ms/step -
   loss: 0.1261 - acc: 0.9891 - val_loss: 0.0822 -
   val_acc: 1.0000
28 Epoch 13/500
29 6/6 [==============================] - 0s 3ms/step -
   loss: 0.1177 - acc: 0.9945 - val_loss: 0.0736 -
   val_acc: 0.9891
30 Epoch 14/500
31 6/6 [==============================] - 0s 3ms/step -
   loss: 0.0943 - acc: 0.9836 - val_loss: 0.0612 -
   val_acc: 0.9891
32 Epoch 15/500
33 6/6 [==============================] - 0s 3ms/step -
   loss: 0.0965 - acc: 0.9836 - val_loss: 0.0528 -
   val_acc: 1.0000
34 Epoch 16/500
35 6/6 [==============================] - 0s 6ms/step -
   loss: 0.0751 - acc: 0.9891 - val_loss: 0.0486 -
   val_acc: 0.9891
36 Epoch 17/500
37 6/6 [==============================] - 0s 6ms/step -
   loss: 0.0681 - acc: 0.9891 - val_loss: 0.0406 -
   val_acc: 1.0000
38 Epoch 18/500
39 6/6 [==============================] - 0s 8ms/step -
   loss: 0.0607 - acc: 0.9891 - val_loss: 0.0427 -
   val_acc: 0.9891
40 Epoch 19/500
41 6/6 [==============================] - 0s 5ms/step -
   loss: 0.0573 - acc: 0.9945 - val_loss: 0.0356 -
   val_acc: 0.9891
```

```
42 Epoch 20/500
43 6/6 [==============================] - 0s 6ms/step -
   loss: 0.0572 - acc: 0.9945 - val_loss: 0.0370 -
   val_acc: 0.9891
44 Epoch 21/500
45 6/6 [==============================] - 0s 6ms/step -
   loss: 0.0490 - acc: 0.9891 - val_loss: 0.0351 -
   val_acc: 0.9891
46 Epoch 22/500
47 6/6 [==============================] - 0s 6ms/step -
   loss: 0.0446 - acc: 0.9945 - val_loss: 0.0299 -
   val_acc: 0.9891
48 Epoch 23/500
49 6/6 [==============================] - 0s 6ms/step -
   loss: 0.0442 - acc: 0.9945 - val_loss: 0.0256 -
   val_acc: 1.0000
50 Epoch 24/500
51 6/6 [==============================] - 0s 6ms/step -
   loss: 0.0454 - acc: 0.9891 - val_loss: 0.0238 -
   val_acc: 1.0000
52 Epoch 25/500
53 6/6 [==============================] - 0s 4ms/step -
   loss: 0.0451 - acc: 0.9945 - val_loss: 0.0213 -
   val_acc: 1.0000
54 Epoch 26/500
55 6/6 [==============================] - 0s 3ms/step -
   loss: 0.0352 - acc: 0.9891 - val_loss: 0.0231 -
   val_acc: 0.9891
56 Epoch 27/500
57 6/6 [==============================] - 0s 6ms/step -
   loss: 0.0383 - acc: 0.9945 - val_loss: 0.0191 -
   val_acc: 1.0000
58 Epoch 28/500
59 6/6 [==============================] - 0s 6ms/step -
   loss: 0.0342 - acc: 0.9945 - val_loss: 0.0304 -
   val_acc: 0.9891
60 Epoch 29/500
61 6/6 [==============================] - 0s 5ms/step -
   loss: 0.0264 - acc: 1.0000 - val_loss: 0.0197 -
   val_acc: 0.9891
62 Epoch 30/500
```

```
63 6/6 [==============================] - 0s 6ms/step
    - loss: 0.0263 - acc: 0.9945 - val_loss: 0.0168 -
   val_acc: 1.0000
64 Epoch 31/500
65 6/6 [==============================] - 0s 6ms/step
    - loss: 0.0337 - acc: 0.9891 - val_loss: 0.0163 -
   val_acc: 1.0000
66 Epoch 32/500
67 6/6 [==============================] - 0s 6ms/step
    - loss: 0.0246 - acc: 0.9945 - val_loss: 0.0156 -
   val_acc: 1.0000
68 Epoch 33/500
69 6/6 [==============================] - 0s 3ms/step
    - loss: 0.0244 - acc: 0.9891 - val_loss: 0.0186 -
   val_acc: 0.9891
70 Epoch 34/500
71 6/6 [==============================] - 0s 3ms/step
    - loss: 0.0290 - acc: 0.9891 - val_loss: 0.0136 -
   val_acc: 1.0000
72 Epoch 35/500
73 6/6 [==============================] - 0s 7ms/step
    - loss: 0.0276 - acc: 0.9945 - val_loss: 0.0196 -
   val_acc: 0.9891
74 Epoch 36/500
75 6/6 [==============================] - 0s 5ms/step
    - loss: 0.0195 - acc: 1.0000 - val_loss: 0.0120 -
   val_acc: 1.0000
76 Epoch 37/500
77 6/6 [==============================] - 0s 6ms/step
    - loss: 0.0266 - acc: 0.9945 - val_loss: 0.0124 -
   val_acc: 1.0000
78 Epoch 38/500
79 6/6 [==============================] - 0s 6ms/step
    - loss: 0.0185 - acc: 0.9945 - val_loss: 0.0155 -
   val_acc: 0.9891
80 Epoch 39/500
81 6/6 [==============================] - 0s 6ms/step
    - loss: 0.0273 - acc: 0.9945 - val_loss: 0.0105 -
   val_acc: 1.0000
82 Epoch 40/500
83 6/6 [==============================] - 0s 3ms/step
```

```
 83  - loss: 0.0205 - acc: 0.9945 - val_loss: 0.0105 -
     val_acc: 1.0000
 84 Epoch 41/500
 85 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0166 - acc: 0.9945 - val_loss: 0.0111 -
     val_acc: 1.0000
 86 Epoch 42/500
 87 6/6 [==============================] - 0s 4ms/step
     - loss: 0.0158 - acc: 0.9945 - val_loss: 0.0271 -
     val_acc: 0.9891
 88 Epoch 43/500
 89 6/6 [==============================] - 0s 3ms/step
     - loss: 0.0221 - acc: 0.9945 - val_loss: 0.0096 -
     val_acc: 1.0000
 90 Epoch 44/500
 91 6/6 [==============================] - 0s 3ms/step
     - loss: 0.0169 - acc: 0.9891 - val_loss: 0.0088 -
     val_acc: 1.0000
 92 Epoch 45/500
 93 6/6 [==============================] - 0s 8ms/step
     - loss: 0.0154 - acc: 1.0000 - val_loss: 0.0086 -
     val_acc: 1.0000
 94 Epoch 46/500
 95 6/6 [==============================] - 0s 5ms/step
     - loss: 0.0232 - acc: 0.9891 - val_loss: 0.0078 -
     val_acc: 1.0000
 96 Epoch 47/500
 97 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0177 - acc: 0.9945 - val_loss: 0.0197 -
     val_acc: 0.9891
 98 Epoch 48/500
 99 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0213 - acc: 0.9891 - val_loss: 0.0074 -
     val_acc: 1.0000
100 Fold...
101 Epoch 1/500
102 6/6 [==============================] - 0s 19ms/step
     - loss: 1.1028 - acc: 0.5464 - val_loss: 0.7273 -
     val_acc: 0.6957
103 Epoch 2/500
104 6/6 [==============================] - 0s 6ms/step
```

```
104  - loss: 0.6780 - acc: 0.7049 - val_loss: 0.5615 -
     val_acc: 0.6739
105 Epoch 3/500
106 6/6 [==============================] - 0s 6ms/step
      - loss: 0.5223 - acc: 0.7705 - val_loss: 0.4673 -
     val_acc: 0.7826
107 Epoch 4/500
108 6/6 [==============================] - 0s 6ms/step
      - loss: 0.4321 - acc: 0.8361 - val_loss: 0.4143 -
     val_acc: 0.7717
109 Epoch 5/500
110 6/6 [==============================] - 0s 6ms/step
      - loss: 0.3838 - acc: 0.8470 - val_loss: 0.3513 -
     val_acc: 0.9022
111 Epoch 6/500
112 6/6 [==============================] - 0s 6ms/step
      - loss: 0.3284 - acc: 0.8852 - val_loss: 0.3181 -
     val_acc: 0.8804
113 Epoch 7/500
114 6/6 [==============================] - 0s 6ms/step
      - loss: 0.2908 - acc: 0.9016 - val_loss: 0.2685 -
     val_acc: 0.9783
115 Epoch 8/500
116 6/6 [==============================] - 0s 6ms/step
      - loss: 0.2547 - acc: 0.9235 - val_loss: 0.2452 -
     val_acc: 0.9457
117 Epoch 9/500
118 6/6 [==============================] - 0s 3ms/step
      - loss: 0.2197 - acc: 0.9454 - val_loss: 0.2086 -
     val_acc: 0.9783
119 Epoch 10/500
120 6/6 [==============================] - 0s 5ms/step
      - loss: 0.1731 - acc: 0.9672 - val_loss: 0.2020 -
     val_acc: 0.9457
121 Epoch 11/500
122 6/6 [==============================] - 0s 3ms/step
      - loss: 0.1592 - acc: 0.9836 - val_loss: 0.1963 -
     val_acc: 0.9130
123 Epoch 12/500
124 6/6 [==============================] - 0s 6ms/step
      - loss: 0.1608 - acc: 0.9399 - val_loss: 0.1410 -
```

```
124 val_acc: 1.0000
125 Epoch 13/500
126 6/6 [==============================] - 0s 6ms/step
     - loss: 0.1281 - acc: 0.9836 - val_loss: 0.1335 -
    val_acc: 0.9565
127 Epoch 14/500
128 6/6 [==============================] - 0s 6ms/step
     - loss: 0.1099 - acc: 0.9781 - val_loss: 0.1120 -
    val_acc: 1.0000
129 Epoch 15/500
130 6/6 [==============================] - 0s 6ms/step
     - loss: 0.1067 - acc: 0.9891 - val_loss: 0.1006 -
    val_acc: 0.9891
131 Epoch 16/500
132 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0919 - acc: 0.9727 - val_loss: 0.0946 -
    val_acc: 0.9783
133 Epoch 17/500
134 6/6 [==============================] - 0s 3ms/step
     - loss: 0.0855 - acc: 0.9836 - val_loss: 0.0887 -
    val_acc: 1.0000
135 Epoch 18/500
136 6/6 [==============================] - 0s 3ms/step
     - loss: 0.0679 - acc: 0.9945 - val_loss: 0.0891 -
    val_acc: 0.9783
137 Epoch 19/500
138 6/6 [==============================] - 0s 3ms/step
     - loss: 0.0678 - acc: 0.9891 - val_loss: 0.0672 -
    val_acc: 1.0000
139 Epoch 20/500
140 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0560 - acc: 1.0000 - val_loss: 0.0635 -
    val_acc: 1.0000
141 Epoch 21/500
142 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0665 - acc: 0.9781 - val_loss: 0.0584 -
    val_acc: 0.9891
143 Epoch 22/500
144 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0467 - acc: 0.9945 - val_loss: 0.0524 -
    val_acc: 0.9891
```

```
145 Epoch 23/500
146 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0458 - acc: 0.9891 - val_loss: 0.0492 -
    val_acc: 0.9891
147 Epoch 24/500
148 6/6 [==============================] - 0s 3ms/step
     - loss: 0.0374 - acc: 0.9945 - val_loss: 0.0466 -
    val_acc: 1.0000
149 Epoch 25/500
150 6/6 [==============================] - 0s 3ms/step
     - loss: 0.0326 - acc: 1.0000 - val_loss: 0.0434 -
    val_acc: 1.0000
151 Epoch 26/500
152 6/6 [==============================] - 0s 3ms/step
     - loss: 0.0349 - acc: 1.0000 - val_loss: 0.0454 -
    val_acc: 1.0000
153 Epoch 27/500
154 6/6 [==============================] - 0s 3ms/step
     - loss: 0.0327 - acc: 0.9945 - val_loss: 0.0380 -
    val_acc: 0.9891
155 Epoch 28/500
156 6/6 [==============================] - 0s 3ms/step
     - loss: 0.0299 - acc: 0.9891 - val_loss: 0.0431 -
    val_acc: 1.0000
157 Epoch 29/500
158 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0333 - acc: 1.0000 - val_loss: 0.0319 -
    val_acc: 0.9891
159 Epoch 30/500
160 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0275 - acc: 0.9945 - val_loss: 0.0319 -
    val_acc: 0.9891
161 Epoch 31/500
162 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0216 - acc: 1.0000 - val_loss: 0.0304 -
    val_acc: 1.0000
163 Epoch 32/500
164 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0243 - acc: 0.9945 - val_loss: 0.0278 -
    val_acc: 1.0000
165 Epoch 33/500
```

```
166 6/6 [==============================] - 0s 6ms/step
    - loss: 0.0176 - acc: 1.0000 - val_loss: 0.0448 -
    val_acc: 0.9783
167 Epoch 34/500
168 6/6 [==============================] - 0s 6ms/step
    - loss: 0.0236 - acc: 1.0000 - val_loss: 0.0397 -
    val_acc: 0.9891
169 Epoch 35/500
170 6/6 [==============================] - 0s 6ms/step
    - loss: 0.0169 - acc: 1.0000 - val_loss: 0.0238 -
    val_acc: 0.9891
171 Epoch 36/500
172 6/6 [==============================] - 0s 6ms/step
    - loss: 0.0147 - acc: 1.0000 - val_loss: 0.0288 -
    val_acc: 0.9891
173 Epoch 37/500
174 6/6 [==============================] - 0s 3ms/step
    - loss: 0.0218 - acc: 0.9891 - val_loss: 0.0273 -
    val_acc: 0.9891
175 Epoch 38/500
176 6/6 [==============================] - 0s 3ms/step
    - loss: 0.0128 - acc: 1.0000 - val_loss: 0.0222 -
    val_acc: 0.9891
177 Epoch 39/500
178 6/6 [==============================] - 0s 3ms/step
    - loss: 0.0131 - acc: 1.0000 - val_loss: 0.0212 -
    val_acc: 0.9891
179 Epoch 40/500
180 6/6 [==============================] - 0s 3ms/step
    - loss: 0.0133 - acc: 1.0000 - val_loss: 0.0202 -
    val_acc: 0.9891
181 Epoch 41/500
182 6/6 [==============================] - 0s 8ms/step
    - loss: 0.0139 - acc: 1.0000 - val_loss: 0.0205 -
    val_acc: 1.0000
183 Fold...
184 Epoch 1/500
185 6/6 [==============================] - 0s 22ms/step
    - loss: 0.8546 - acc: 0.6685 - val_loss: 0.6283 -
    val_acc: 0.9011
186 Epoch 2/500
```

```
187 6/6 [==============================] - 0s 6ms/step
     - loss: 0.5587 - acc: 0.8533 - val_loss: 0.4872 -
    val_acc: 0.9341
188 Epoch 3/500
189 6/6 [==============================] - 0s 6ms/step
     - loss: 0.4277 - acc: 0.8913 - val_loss: 0.4084 -
    val_acc: 0.9121
190 Epoch 4/500
191 6/6 [==============================] - 0s 6ms/step
     - loss: 0.3488 - acc: 0.9076 - val_loss: 0.3452 -
    val_acc: 0.9780
192 Epoch 5/500
193 6/6 [==============================] - 0s 6ms/step
     - loss: 0.3264 - acc: 0.9022 - val_loss: 0.2977 -
    val_acc: 0.9670
194 Epoch 6/500
195 6/6 [==============================] - 0s 6ms/step
     - loss: 0.2642 - acc: 0.9620 - val_loss: 0.2612 -
    val_acc: 0.9670
196 Epoch 7/500
197 6/6 [==============================] - 0s 6ms/step
     - loss: 0.2402 - acc: 0.9457 - val_loss: 0.2301 -
    val_acc: 0.9780
198 Epoch 8/500
199 6/6 [==============================] - 0s 6ms/step
     - loss: 0.2023 - acc: 0.9565 - val_loss: 0.2044 -
    val_acc: 0.9780
200 Epoch 9/500
201 6/6 [==============================] - 0s 6ms/step
     - loss: 0.1763 - acc: 0.9728 - val_loss: 0.1771 -
    val_acc: 0.9890
202 Epoch 10/500
203 6/6 [==============================] - 0s 6ms/step
     - loss: 0.1552 - acc: 0.9674 - val_loss: 0.1555 -
    val_acc: 0.9890
204 Epoch 11/500
205 6/6 [==============================] - 0s 6ms/step
     - loss: 0.1349 - acc: 0.9837 - val_loss: 0.1341 -
    val_acc: 1.0000
206 Epoch 12/500
207 6/6 [==============================] - 0s 5ms/step
```

```
207   - loss: 0.1194 - acc: 0.9837 - val_loss: 0.1254 -
      val_acc: 0.9780
208 Epoch 13/500
209 6/6 [==============================] - 0s 6ms/step
      - loss: 0.0993 - acc: 0.9946 - val_loss: 0.1133 -
      val_acc: 0.9670
210 Epoch 14/500
211 6/6 [==============================] - 0s 6ms/step
      - loss: 0.0875 - acc: 0.9891 - val_loss: 0.0969 -
      val_acc: 0.9780
212 Epoch 15/500
213 6/6 [==============================] - 0s 6ms/step
      - loss: 0.0874 - acc: 0.9837 - val_loss: 0.0822 -
      val_acc: 0.9890
214 Epoch 16/500
215 6/6 [==============================] - 0s 6ms/step
      - loss: 0.0643 - acc: 1.0000 - val_loss: 0.0791 -
      val_acc: 0.9890
216 Epoch 17/500
217 6/6 [==============================] - 0s 6ms/step
      - loss: 0.0751 - acc: 0.9891 - val_loss: 0.0835 -
      val_acc: 0.9670
218 Epoch 18/500
219 6/6 [==============================] - 0s 6ms/step
      - loss: 0.0598 - acc: 0.9891 - val_loss: 0.0607 -
      val_acc: 0.9890
220 Epoch 19/500
221 6/6 [==============================] - 0s 6ms/step
      - loss: 0.0585 - acc: 0.9891 - val_loss: 0.0557 -
      val_acc: 0.9890
222 Epoch 20/500
223 6/6 [==============================] - 0s 6ms/step
      - loss: 0.0562 - acc: 0.9891 - val_loss: 0.0530 -
      val_acc: 0.9890
224 Epoch 21/500
225 6/6 [==============================] - 0s 6ms/step
      - loss: 0.0439 - acc: 0.9946 - val_loss: 0.0467 -
      val_acc: 0.9890
226 Epoch 22/500
227 6/6 [==============================] - 0s 6ms/step
      - loss: 0.0474 - acc: 1.0000 - val_loss: 0.0599 -
```

```
227 val_acc: 0.9780
228 Epoch 23/500
229 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0426 - acc: 0.9946 - val_loss: 0.0467 -
    val_acc: 0.9890
230 Epoch 24/500
231 6/6 [==============================] - 0s 3ms/step
     - loss: 0.0432 - acc: 0.9946 - val_loss: 0.0398 -
    val_acc: 0.9890
232 Epoch 25/500
233 6/6 [==============================] - 0s 8ms/step
     - loss: 0.0337 - acc: 0.9946 - val_loss: 0.0397 -
    val_acc: 0.9890
234 Epoch 26/500
235 6/6 [==============================] - 0s 5ms/step
     - loss: 0.0312 - acc: 0.9946 - val_loss: 0.0355 -
    val_acc: 0.9890
236 Epoch 27/500
237 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0335 - acc: 0.9946 - val_loss: 0.0354 -
    val_acc: 0.9890
238 Epoch 28/500
239 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0283 - acc: 1.0000 - val_loss: 0.0315 -
    val_acc: 0.9890
240 Epoch 29/500
241 6/6 [==============================] - 0s 3ms/step
     - loss: 0.0295 - acc: 0.9946 - val_loss: 0.0302 -
    val_acc: 0.9890
242 Epoch 30/500
243 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0329 - acc: 0.9946 - val_loss: 0.0391 -
    val_acc: 0.9890
244 Epoch 31/500
245 6/6 [==============================] - 0s 7ms/step
     - loss: 0.0238 - acc: 0.9946 - val_loss: 0.0274 -
    val_acc: 0.9890
246 Epoch 32/500
247 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0232 - acc: 0.9946 - val_loss: 0.0286 -
    val_acc: 0.9890
```

```
248 Epoch 33/500
249 6/6 [==============================] - 0s 3ms/step
     - loss: 0.0276 - acc: 0.9946 - val_loss: 0.0300 -
    val_acc: 0.9890
250 Epoch 34/500
251 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0190 - acc: 1.0000 - val_loss: 0.0269 -
    val_acc: 0.9890
252 Epoch 35/500
253 6/6 [==============================] - 0s 3ms/step
     - loss: 0.0224 - acc: 0.9946 - val_loss: 0.0257 -
    val_acc: 0.9890
254 Epoch 36/500
255 6/6 [==============================] - 0s 3ms/step
     - loss: 0.0264 - acc: 0.9837 - val_loss: 0.0228 -
    val_acc: 0.9890
256 Epoch 37/500
257 6/6 [==============================] - 0s 6ms/step
     - loss: 0.0211 - acc: 1.0000 - val_loss: 0.0222 -
    val_acc: 0.9890
258
259 Average loss is: 0.0192468569924434
260 26
261 Epoch 1/26
262 9/9 [==============================] - 0s 3ms/step
     - loss: 0.7582 - acc: 0.6327
263 Epoch 2/26
264 9/9 [==============================] - 0s 2ms/step
     - loss: 0.5094 - acc: 0.7891
265 Epoch 3/26
266 9/9 [==============================] - 0s 2ms/step
     - loss: 0.3720 - acc: 0.9018
267 Epoch 4/26
268 9/9 [==============================] - 0s 2ms/step
     - loss: 0.3025 - acc: 0.9491
269 Epoch 5/26
270 9/9 [==============================] - 0s 2ms/step
     - loss: 0.2310 - acc: 0.9636
271 Epoch 6/26
272 9/9 [==============================] - 0s 4ms/step
     - loss: 0.1816 - acc: 0.9745
```

```
273 Epoch 7/26
274 9/9 [==============================] - 0s 2ms/step
     - loss: 0.1465 - acc: 0.9745
275 Epoch 8/26
276 9/9 [==============================] - 0s 3ms/step
     - loss: 0.1169 - acc: 0.9891
277 Epoch 9/26
278 9/9 [==============================] - 0s 2ms/step
     - loss: 0.0961 - acc: 0.9818
279 Epoch 10/26
280 9/9 [==============================] - 0s 4ms/step
     - loss: 0.0777 - acc: 0.9927
281 Epoch 11/26
282 9/9 [==============================] - 0s 4ms/step
     - loss: 0.0667 - acc: 0.9818
283 Epoch 12/26
284 9/9 [==============================] - 0s 2ms/step
     - loss: 0.0505 - acc: 1.0000
285 Epoch 13/26
286 9/9 [==============================] - 0s 2ms/step
     - loss: 0.0499 - acc: 0.9891
287 Epoch 14/26
288 9/9 [==============================] - 0s 2ms/step
     - loss: 0.0444 - acc: 0.9927
289 Epoch 15/26
290 9/9 [==============================] - 0s 2ms/step
     - loss: 0.0373 - acc: 0.9927
291 Epoch 16/26
292 9/9 [==============================] - 0s 4ms/step
     - loss: 0.0364 - acc: 0.9964
293 Epoch 17/26
294 9/9 [==============================] - 0s 2ms/step
     - loss: 0.0335 - acc: 0.9891
295 Epoch 18/26
296 9/9 [==============================] - 0s 4ms/step
     - loss: 0.0294 - acc: 0.9927
297 Epoch 19/26
298 9/9 [==============================] - 0s 3ms/step
     - loss: 0.0262 - acc: 0.9927
299 Epoch 20/26
300 9/9 [==============================] - 0s 2ms/step
```

```
300    - loss: 0.0235 - acc: 1.0000
301 Epoch 21/26
302 9/9 [==============================] - 0s 2ms/step
       - loss: 0.0264 - acc: 0.9891
303 Epoch 22/26
304 9/9 [==============================] - 0s 4ms/step
       - loss: 0.0208 - acc: 0.9964
305 Epoch 23/26
306 9/9 [==============================] - 0s 2ms/step
       - loss: 0.0167 - acc: 0.9964
307 Epoch 24/26
308 9/9 [==============================] - 0s 2ms/step
       - loss: 0.0217 - acc: 0.9964
309 Epoch 25/26
310 9/9 [==============================] - 0s 2ms/step
       - loss: 0.0197 - acc: 0.9964
311 Epoch 26/26
312 9/9 [==============================] - 0s 2ms/step
       - loss: 0.0166 - acc: 0.9964
313 3/3 [==============================] - 0s 0s/step -
     loss: 0.0181 - acc: 0.9855
314 [0.018073327839374542, 0.9855072498321533]
315
316 Process finished with exit code 0
317
```