```
1 C:\Users\USER\anaconda3\envs\tensor\pythonw.exe "D:/
  python/machine learning/deep_learning_Heart_failure/
  deep_learning.py"
2 Using TensorFlow backend.
3 2020-11-17 23:25:00.393484: I tensorflow/core/
  platform/cpu_feature_quard.cc:142] Your CPU supports
  instructions that this TensorFlow binary was not
  compiled to use: AVX AVX2
4 Model: "sequential_1"
6 Layer (type)
                        Output Shape
           Param #
8 dense_1 (Dense)
                        (None, 15
             195
10 dense_2 (Dense)
                        (None, 25
             400
11 ______
12 dense_3 (Dense)
                        (None, 20
               520
13
                        (None, 20
14 dense_4 (Dense)
               420
15 _____
16 dense_5 (Dense)
                        (None, 1
                21
==========
18 Total params: 1,556
19 Trainable params: 1,556
20 Non-trainable params: 0
21 ______
22 Epoch 1/50
23
24 20/299 [=>.....] - ETA: 2s -
 loss: 4150.4717 - accuracy: 0.6000
```

```
step - loss: 1306.4214 - accuracy: 0.5953
26 Epoch 2/50
27
28 20/299 [=>.....] - ETA: 0s -
  loss: 499.9772 - accuracy: 0.2500
29 299/299 [============= ] - Os 59us/
  step - loss: 335.9596 - accuracy: 0.6355
30 Epoch 3/50
31
32 20/299 [=>.....] - ETA: 0s -
  loss: 77.7499 - accuracy: 0.8000
step - loss: 83.9914 - accuracy: 0.5251
34 Epoch 4/50
35
36 20/299 [=>.....] - ETA: Os -
  loss: 70.9627 - accuracy: 0.2000
step - loss: 36.2593 - accuracy: 0.5686
38 Epoch 5/50
39
40 20/299 [=>.....] - ETA: 0s -
  loss: 38.0755 - accuracy: 0.3000
step - loss: 44.0727 - accuracy: 0.5217
42 Epoch 6/50
43
  20/299 [=>.....] - ETA: 0s -
44
  loss: 10.1819 - accuracy: 0.5500
45 299/299 [============== ] - Os 61us/
  step - loss: 43.7738 - accuracy: 0.5117
46 Epoch 7/50
47
48
  20/299 [=>.....] - ETA: 0s -
  loss: 7.7513 - accuracy: 0.8500
49 299/299 [============ ] - Os 63us/
  step - loss: 20.4427 - accuracy: 0.5953
50 Epoch 8/50
51
52 20/299 [=>.....] - ETA: 0s -
  loss: 28.1452 - accuracy: 0.7500
53 299/299 [============= ] - Os 70us/
  step - loss: 14.2533 - accuracy: 0.6254
```

```
54 Epoch 9/50
55
   20/299 [=>.....] - ETA: 0s -
56
  loss: 7.6665 - accuracy: 0.5000
57 299/299 [=========== ] - Os 73us/
  step - loss: 12.8313 - accuracy: 0.5786
58 Epoch 10/50
59
60 20/299 [=>.....] - ETA: Os -
  loss: 25.3616 - accuracy: 0.5000
61 299/299 [============= ] - Os 68us/
  step - loss: 24.0790 - accuracy: 0.6120
62 Epoch 11/50
63
64 20/299 [=>.....] - ETA: 0s -
  loss: 32.5703 - accuracy: 0.6000
65 299/299 [============= ] - Os 59us/
  step - loss: 34.0877 - accuracy: 0.5819
66 Epoch 12/50
67
   20/299 [=>.....] - ETA: 0s -
68
  loss: 10.3724 - accuracy: 0.7500
69 299/299 [============ ] - Os 59us/
  step - loss: 20.1786 - accuracy: 0.5987
70 Epoch 13/50
71
72 20/299 [=>.....] - ETA: 0s -
  loss: 19.8604 - accuracy: 0.6000
73 299/299 [============= ] - Os 67us/
  step - loss: 10.5320 - accuracy: 0.5853
74 Epoch 14/50
75
76 20/299 [=>.....] - ETA: 0s -
  loss: 0.9960 - accuracy: 0.8000
77 299/299 [============= ] - Os 67us/
  step - loss: 24.0038 - accuracy: 0.6221
78 Epoch 15/50
79
80 20/299 [=>.....] - ETA: 0s -
  loss: 64.9291 - accuracy: 0.5500
81 299/299 [============= ] - Os 77us/
  step - loss: 42.2225 - accuracy: 0.5585
82 Epoch 16/50
83
```

```
20/299 [=>.....] - ETA: Os
   - loss: 2.4055 - accuracy: 0.6000
85 299/299 [============ ] - Os 73us/
  step - loss: 55.9704 - accuracy: 0.5518
86 Epoch 17/50
87
88
   20/299 [=>.....] - ETA: Os
   - loss: 7.9529 - accuracy: 0.5000
89 299/299 [============ ] - Os 70us/
  step - loss: 18.6054 - accuracy: 0.5485
90 Epoch 18/50
91
92
   20/299 [=>.....] - ETA: Os
   - loss: 23.2023 - accuracy: 0.7000
step - loss: 18.9715 - accuracy: 0.5251
94 Epoch 19/50
95
96
   20/299 [=>....] - ETA: Os
   - loss: 25.7359 - accuracy: 0.6500
step - loss: 25.4543 - accuracy: 0.6087
98 Epoch 20/50
99
   20/299 [=>.....] - ETA: 0s
100
   - loss: 18.8466 - accuracy: 0.8000
step - loss: 37.0553 - accuracy: 0.5485
102 Epoch 21/50
103
104
   20/299 [=>.....] - ETA: Os
   - loss: 42.7185 - accuracy: 0.6500
step - loss: 45.0025 - accuracy: 0.5518
106 Epoch 22/50
107
   20/299 [=>.....] - ETA: Os
108
   - loss: 13.9128 - accuracy: 0.5500
109 299/299 [============== ] - Os 60us/
  step - loss: 22.9492 - accuracy: 0.6321
110 Epoch 23/50
111
112
   20/299 [=>.....] - ETA: Os
   - loss: 26.6851 - accuracy: 0.7000
```

```
step - loss: 25.7021 - accuracy: 0.5920
114 Epoch 24/50
115
116 20/299 [=>.....] - ETA: 0s
   - loss: 20.5126 - accuracy: 0.7000
117 299/299 [============= ] - Os 67us/
  step - loss: 17.9098 - accuracy: 0.5485
118 Epoch 25/50
119
120
   20/299 [=>.....] - ETA: Os
   - loss: 13.8334 - accuracy: 0.7500
121 299/299 [============= ] - Os 73us/
  step - loss: 21.6731 - accuracy: 0.6054
122 Epoch 26/50
123
124
   20/299 [=>.....] - ETA: Os
   - loss: 46.1083 - accuracy: 0.3000
step - loss: 45.2285 - accuracy: 0.5819
126 Epoch 27/50
127
128 20/299 [=>.....] - ETA: 0s
   - loss: 139.5273 - accuracy: 0.4000
step - loss: 23.6329 - accuracy: 0.5987
130 Epoch 28/50
131
   20/299 [=>.....] - ETA: 0s
132
   - loss: 1.6194 - accuracy: 0.8000
133 299/299 [============= ] - Os 70us/
  step - loss: 10.7353 - accuracy: 0.5920
134 Epoch 29/50
135
   20/299 [=>.....] - ETA: Os
136
   - loss: 12.0955 - accuracy: 0.7000
step - loss: 22.8070 - accuracy: 0.5920
138 Epoch 30/50
139
140 20/299 [=>.....] - ETA: 0s
   - loss: 21.7939 - accuracy: 0.4000
step - loss: 44.9796 - accuracy: 0.5251
```

```
142 Epoch 31/50
143
144
    20/299 [=>.....] - ETA: Os
    - loss: 52.5027 - accuracy: 0.7500
145 299/299 [============ ] - Os 58us/
   step - loss: 28.7059 - accuracy: 0.5987
146 Epoch 32/50
147
148
   20/299 [=>.....] - ETA: Os
    - loss: 6.4072 - accuracy: 0.7500
149 299/299 [============= ] - Os 63us/
   step - loss: 19.4640 - accuracy: 0.5987
150 Epoch 33/50
151
152
    20/299 [=>.....] - ETA: Os
    - loss: 52.4354 - accuracy: 0.3000
153 299/299 [============= ] - Os 60us/
   step - loss: 27.3310 - accuracy: 0.5619
154 Epoch 34/50
155
156
    20/299 [=>.....] - ETA: Os
    - loss: 31.0322 - accuracy: 0.4500
157 299/299 [============= ] - Os 80us/
   step - loss: 46.2540 - accuracy: 0.6020
158 Epoch 35/50
159
160
    20/299 [=>.....] - ETA: Os
    - loss: 64.5573 - accuracy: 0.6500
161 299/299 [============= ] - Os 77us/
   step - loss: 40.2157 - accuracy: 0.5351
162 Epoch 36/50
163
164
    20/299 [=>.....] - ETA: Os
    - loss: 51.7337 - accuracy: 0.6500
165 299/299 [============= ] - Os 67us/
   step - loss: 37.9345 - accuracy: 0.6154
166 Epoch 37/50
167
    20/299 [=>.....] - ETA: Os
168
    - loss: 60.3068 - accuracy: 0.4000
169 299/299 [============= ] - Os 75us/
   step - loss: 34.6013 - accuracy: 0.5485
170 Epoch 38/50
171
```

```
20/299 [=>.....] - ETA: Os
   - loss: 41.1558 - accuracy: 0.3000
step - loss: 37.4306 - accuracy: 0.5418
174 Epoch 39/50
175
176
   20/299 [=>.....] - ETA: Os
   - loss: 17.6839 - accuracy: 0.7000
177 299/299 [============== ] - Os 62us/
  step - loss: 23.1146 - accuracy: 0.5719
178 Epoch 40/50
179
180
   20/299 [=>.....] - ETA: Os
   - loss: 10.8365 - accuracy: 0.5500
step - loss: 24.3295 - accuracy: 0.5619
182 Epoch 41/50
183
  20/299 [=>.....] - ETA: Os
184
   - loss: 51.0418 - accuracy: 0.8000
step - loss: 47.8306 - accuracy: 0.5886
186 Epoch 42/50
187
   20/299 [=>.....] - ETA: 0s
188
   - loss: 11.0842 - accuracy: 0.3000
189 299/299 [============== ] - Os 57us/
  step - loss: 18.5360 - accuracy: 0.5518
190 Epoch 43/50
191
192
   20/299 [=>.....] - ETA: Os
   - loss: 40.9549 - accuracy: 0.5000
step - loss: 42.4284 - accuracy: 0.5886
194 Epoch 44/50
195
   20/299 [=>....] - ETA: 0s
196
   - loss: 14.7326 - accuracy: 0.4000
step - loss: 18.0589 - accuracy: 0.6321
198 Epoch 45/50
199
200
   20/299 [=>.....] - ETA: 0s
   - loss: 15.8636 - accuracy: 0.6500
```

```
step - loss: 14.7178 - accuracy: 0.6355
202 Epoch 46/50
203
204 20/299 [=>.....] - ETA: 0s
   - loss: 19.5816 - accuracy: 0.4000
205 299/299 [============= ] - Os 67us/
  step - loss: 36.0473 - accuracy: 0.5786
206 Epoch 47/50
207
208
   20/299 [=>.....] - ETA: Os
   - loss: 43.5156 - accuracy: 0.6500
step - loss: 34.9252 - accuracy: 0.5853
210 Epoch 48/50
211
212 20/299 [=>.....] - ETA: Os
   - loss: 5.6841 - accuracy: 0.8000
step - loss: 22.1358 - accuracy: 0.5886
214 Epoch 49/50
215
216 20/299 [=>.....] - ETA: Os
   - loss: 11.3145 - accuracy: 0.7500
step - loss: 19.9912 - accuracy: 0.6254
218 Epoch 50/50
219
220
   20/299 [=>.....] - ETA: Os
   - loss: 29.9405 - accuracy: 0.6500
step - loss: 21.2990 - accuracy: 0.5050
222
223 32/299 [==>.....] - ETA: Os
225 Test accuracy: 0.7056856155395508
226
227 Process finished with exit code 0
228
```