```
 1 "C:\Users\Bhagwan Goswami\AppData\Local\Microsoft\
   WindowsApps\python3.9.exe" "D:/ML Project/Breast
   Cancer Prediction/Breast Cancer Prediction ANN.py"
 2 2023-02-10 20:15:28.391100: I tensorflow/core/
   platform/cpu_feature_guard.cc:193] This TensorFlow
   binary is optimized with oneAPI Deep Neural Network
   Library (oneDNN) to use the following CPU
   instructions in performance-critical operations:  AVX
    AVX2
 3 To enable them in other operations, rebuild
   TensorFlow with the appropriate compiler flags.
 4 Epoch 1/100
 5 15/15 [==============================] - 2s 4ms/step
    - loss: 11.7126 - accuracy: 0.6374
 6 Epoch 2/100
 7 15/15 [==============================] - 0s 3ms/step
    - loss: 8.7956 - accuracy: 0.6374
 8 Epoch 3/100
 9 15/15 [==============================] - 0s 3ms/step
    - loss: 6.4129 - accuracy: 0.6374
10 Epoch 4/100
11 15/15 [==============================] - 0s 3ms/step
    - loss: 4.5954 - accuracy: 0.6374
12 Epoch 5/100
13 15/15 [==============================] - 0s 3ms/step
    - loss: 2.8502 - accuracy: 0.6374
14 Epoch 6/100
15 15/15 [==============================] - 0s 3ms/step
    - loss: 0.8491 - accuracy: 0.7451
16 Epoch 7/100
17 15/15 [==============================] - 0s 3ms/step
    - loss: 0.6860 - accuracy: 0.8615
18 Epoch 8/100
19 15/15 [==============================] - 0s 3ms/step
    - loss: 0.5332 - accuracy: 0.8396
20 Epoch 9/100
21 15/15 [==============================] - 0s 4ms/step
    - loss: 0.5004 - accuracy: 0.8396
22 Epoch 10/100
23 15/15 [==============================] - 0s 4ms/step
    - loss: 0.4876 - accuracy: 0.8835
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24 Epoch 11/100
25 15/15 [==============================] - 0s 3ms/step
      - loss: 0.4815 - accuracy: 0.8681
26 Epoch 12/100
27 15/15 [==============================] - 0s 3ms/step
      - loss: 0.4755 - accuracy: 0.8659
28 Epoch 13/100
29 15/15 [==============================] - 0s 3ms/step
      - loss: 0.4722 - accuracy: 0.8923
30 Epoch 14/100
31 15/15 [==============================] - 0s 3ms/step
      - loss: 0.4678 - accuracy: 0.8879
32 Epoch 15/100
33 15/15 [==============================] - 0s 3ms/step
      - loss: 0.4634 - accuracy: 0.8769
34 Epoch 16/100
35 15/15 [==============================] - 0s 3ms/step
      - loss: 0.4589 - accuracy: 0.8901
36 Epoch 17/100
37 15/15 [==============================] - 0s 3ms/step
      - loss: 0.4546 - accuracy: 0.8945
38 Epoch 18/100
39 15/15 [==============================] - 0s 4ms/step
      - loss: 0.4507 - accuracy: 0.8923
40 Epoch 19/100
41 15/15 [==============================] - 0s 3ms/step
      - loss: 0.4492 - accuracy: 0.9055
42 Epoch 20/100
43 15/15 [==============================] - 0s 2ms/step
      - loss: 0.4484 - accuracy: 0.8791
44 Epoch 21/100
45 15/15 [==============================] - 0s 2ms/step
      - loss: 0.4449 - accuracy: 0.8989
46 Epoch 22/100
47 15/15 [==============================] - 0s 3ms/step
      - loss: 0.4362 - accuracy: 0.9033
48 Epoch 23/100
49 15/15 [==============================] - 0s 4ms/step
      - loss: 0.4353 - accuracy: 0.8923
50 Epoch 24/100
51 15/15 [==============================] - 0s 4ms/step
```

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51  - loss: 0.4310 - accuracy: 0.9055
52 Epoch 25/100
53 15/15 [==============================] - 0s 4ms/step
    - loss: 0.4298 - accuracy: 0.8901
54 Epoch 26/100
55 15/15 [==============================] - 0s 4ms/step
    - loss: 0.4231 - accuracy: 0.9099
56 Epoch 27/100
57 15/15 [==============================] - 0s 4ms/step
    - loss: 0.4211 - accuracy: 0.9099
58 Epoch 28/100
59 15/15 [==============================] - 0s 3ms/step
    - loss: 0.4216 - accuracy: 0.8989
60 Epoch 29/100
61 15/15 [==============================] - 0s 3ms/step
    - loss: 0.4154 - accuracy: 0.9055
62 Epoch 30/100
63 15/15 [==============================] - 0s 2ms/step
    - loss: 0.4137 - accuracy: 0.9143
64 Epoch 31/100
65 15/15 [==============================] - 0s 4ms/step
    - loss: 0.4097 - accuracy: 0.9077
66 Epoch 32/100
67 15/15 [==============================] - 0s 4ms/step
    - loss: 0.4084 - accuracy: 0.9165
68 Epoch 33/100
69 15/15 [==============================] - 0s 3ms/step
    - loss: 0.4060 - accuracy: 0.9099
70 Epoch 34/100
71 15/15 [==============================] - 0s 3ms/step
    - loss: 0.4033 - accuracy: 0.9077
72 Epoch 35/100
73 15/15 [==============================] - 0s 3ms/step
    - loss: 0.3998 - accuracy: 0.9099
74 Epoch 36/100
75 15/15 [==============================] - 0s 5ms/step
    - loss: 0.3979 - accuracy: 0.9099
76 Epoch 37/100
77 15/15 [==============================] - 0s 4ms/step
    - loss: 0.3963 - accuracy: 0.9121
78 Epoch 38/100
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 79 15/15 [==============================] - 0s 2ms/step
       - loss: 0.3955 - accuracy: 0.9099
 80 Epoch 39/100
 81 15/15 [==============================] - 0s 2ms/step
       - loss: 0.3954 - accuracy: 0.9033
 82 Epoch 40/100
 83 15/15 [==============================] - 0s 3ms/step
       - loss: 0.3944 - accuracy: 0.9033
 84 Epoch 41/100
 85 15/15 [==============================] - 0s 4ms/step
       - loss: 0.3856 - accuracy: 0.9121
 86 Epoch 42/100
 87 15/15 [==============================] - 0s 3ms/step
       - loss: 0.3865 - accuracy: 0.9099
 88 Epoch 43/100
 89 15/15 [==============================] - 0s 3ms/step
       - loss: 0.3833 - accuracy: 0.9099
 90 Epoch 44/100
 91 15/15 [==============================] - 0s 4ms/step
       - loss: 0.3820 - accuracy: 0.9143
 92 Epoch 45/100
 93 15/15 [==============================] - 0s 4ms/step
       - loss: 0.3782 - accuracy: 0.9121
 94 Epoch 46/100
 95 15/15 [==============================] - 0s 3ms/step
       - loss: 0.3768 - accuracy: 0.9143
 96 Epoch 47/100
 97 15/15 [==============================] - 0s 4ms/step
       - loss: 0.3789 - accuracy: 0.9121
 98 Epoch 48/100
 99 15/15 [==============================] - 0s 4ms/step
       - loss: 0.3728 - accuracy: 0.9121
100 Epoch 49/100
101 15/15 [==============================] - 0s 3ms/step
       - loss: 0.3708 - accuracy: 0.9121
102 Epoch 50/100
103 15/15 [==============================] - 0s 3ms/step
       - loss: 0.3745 - accuracy: 0.9121
104 Epoch 51/100
105 15/15 [==============================] - 0s 3ms/step
       - loss: 0.3738 - accuracy: 0.9099
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106 Epoch 52/100
107 15/15 [==============================] - 0s 4ms/step
      - loss: 0.3694 - accuracy: 0.9143
108 Epoch 53/100
109 15/15 [==============================] - 0s 3ms/step
      - loss: 0.3656 - accuracy: 0.9099
110 Epoch 54/100
111 15/15 [==============================] - 0s 3ms/step
      - loss: 0.3631 - accuracy: 0.9165
112 Epoch 55/100
113 15/15 [==============================] - 0s 3ms/step
      - loss: 0.3597 - accuracy: 0.9121
114 Epoch 56/100
115 15/15 [==============================] - 0s 5ms/step
      - loss: 0.3595 - accuracy: 0.9165
116 Epoch 57/100
117 15/15 [==============================] - 0s 4ms/step
      - loss: 0.3606 - accuracy: 0.9121
118 Epoch 58/100
119 15/15 [==============================] - 0s 3ms/step
      - loss: 0.3606 - accuracy: 0.9143
120 Epoch 59/100
121 15/15 [==============================] - 0s 3ms/step
      - loss: 0.3532 - accuracy: 0.9121
122 Epoch 60/100
123 15/15 [==============================] - 0s 4ms/step
      - loss: 0.3533 - accuracy: 0.9099
124 Epoch 61/100
125 15/15 [==============================] - 0s 4ms/step
      - loss: 0.3518 - accuracy: 0.9143
126 Epoch 62/100
127 15/15 [==============================] - 0s 4ms/step
      - loss: 0.3550 - accuracy: 0.9121
128 Epoch 63/100
129 15/15 [==============================] - 0s 4ms/step
      - loss: 0.3486 - accuracy: 0.9099
130 Epoch 64/100
131 15/15 [==============================] - 0s 4ms/step
      - loss: 0.3471 - accuracy: 0.9099
132 Epoch 65/100
133 15/15 [==============================] - 0s 3ms/step
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133    - loss: 0.3537 - accuracy: 0.9121
134 Epoch 66/100
135 15/15 [==============================] - 0s 3ms/step
       - loss: 0.3531 - accuracy: 0.9165
136 Epoch 67/100
137 15/15 [==============================] - 0s 3ms/step
       - loss: 0.3432 - accuracy: 0.9099
138 Epoch 68/100
139 15/15 [==============================] - 0s 5ms/step
       - loss: 0.3399 - accuracy: 0.9099
140 Epoch 69/100
141 15/15 [==============================] - 0s 3ms/step
       - loss: 0.3390 - accuracy: 0.9121
142 Epoch 70/100
143 15/15 [==============================] - 0s 3ms/step
       - loss: 0.3367 - accuracy: 0.9143
144 Epoch 71/100
145 15/15 [==============================] - 0s 3ms/step
       - loss: 0.3387 - accuracy: 0.9099
146 Epoch 72/100
147 15/15 [==============================] - 0s 4ms/step
       - loss: 0.3393 - accuracy: 0.9143
148 Epoch 73/100
149 15/15 [==============================] - 0s 3ms/step
       - loss: 0.3364 - accuracy: 0.9099
150 Epoch 74/100
151 15/15 [==============================] - 0s 3ms/step
       - loss: 0.3325 - accuracy: 0.9099
152 Epoch 75/100
153 15/15 [==============================] - 0s 3ms/step
       - loss: 0.3321 - accuracy: 0.9121
154 Epoch 76/100
155 15/15 [==============================] - 0s 4ms/step
       - loss: 0.3303 - accuracy: 0.9143
156 Epoch 77/100
157 15/15 [==============================] - 0s 3ms/step
       - loss: 0.3301 - accuracy: 0.9099
158 Epoch 78/100
159 15/15 [==============================] - 0s 3ms/step
       - loss: 0.3302 - accuracy: 0.9143
160 Epoch 79/100
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161 15/15 [==============================] - 0s 3ms/step
        - loss: 0.3264 - accuracy: 0.9187
162 Epoch 80/100
163 15/15 [==============================] - 0s 5ms/step
        - loss: 0.3261 - accuracy: 0.9121
164 Epoch 81/100
165 15/15 [==============================] - 0s 4ms/step
        - loss: 0.3222 - accuracy: 0.9121
166 Epoch 82/100
167 15/15 [==============================] - 0s 3ms/step
        - loss: 0.3225 - accuracy: 0.9121
168 Epoch 83/100
169 15/15 [==============================] - 0s 4ms/step
        - loss: 0.3216 - accuracy: 0.9099
170 Epoch 84/100
171 15/15 [==============================] - 0s 5ms/step
        - loss: 0.3218 - accuracy: 0.9121
172 Epoch 85/100
173 15/15 [==============================] - 0s 3ms/step
        - loss: 0.3192 - accuracy: 0.9121
174 Epoch 86/100
175 15/15 [==============================] - 0s 3ms/step
        - loss: 0.3163 - accuracy: 0.9121
176 Epoch 87/100
177 15/15 [==============================] - 0s 4ms/step
        - loss: 0.3175 - accuracy: 0.9143
178 Epoch 88/100
179 15/15 [==============================] - 0s 5ms/step
        - loss: 0.3193 - accuracy: 0.9121
180 Epoch 89/100
181 15/15 [==============================] - 0s 3ms/step
        - loss: 0.3144 - accuracy: 0.9143
182 Epoch 90/100
183 15/15 [==============================] - 0s 4ms/step
        - loss: 0.3137 - accuracy: 0.9121
184 Epoch 91/100
185 15/15 [==============================] - 0s 4ms/step
        - loss: 0.3134 - accuracy: 0.9187
186 Epoch 92/100
187 15/15 [==============================] - 0s 4ms/step
        - loss: 0.3090 - accuracy: 0.9121
```

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188 Epoch 93/100
189 15/15 [==============================] - 0s 3ms/step
     - loss: 0.3104 - accuracy: 0.9121
190 Epoch 94/100
191 15/15 [==============================] - 0s 3ms/step
     - loss: 0.3080 - accuracy: 0.9165
192 Epoch 95/100
193 15/15 [==============================] - 0s 3ms/step
     - loss: 0.3078 - accuracy: 0.9121
194 Epoch 96/100
195 15/15 [==============================] - 0s 3ms/step
     - loss: 0.3080 - accuracy: 0.9187
196 Epoch 97/100
197 15/15 [==============================] - 0s 4ms/step
     - loss: 0.3139 - accuracy: 0.9165
198 Epoch 98/100
199 15/15 [==============================] - 0s 3ms/step
     - loss: 0.3082 - accuracy: 0.9121
200 Epoch 99/100
201 15/15 [==============================] - 0s 3ms/step
     - loss: 0.3061 - accuracy: 0.9121
202 Epoch 100/100
203 15/15 [==============================] - 0s 3ms/step
     - loss: 0.3015 - accuracy: 0.9121
204 4/4 [==============================] - 0s 2ms/step
205 [[66  1]
206  [ 7 40]]
207 ANN Accuracy = 0.9298245614035088
208
209 Process finished with exit code 0
210
```