

TRAIN THE MODEL

8. Train The Model

```
In [37]: model.fit_generator(generator=x_train,steps_per_epoch=len(x_train),epochs=20,  
validation_data=x_test,validation_steps=len(x_test))
```

Epoch 1/20

```
/tmp/ipykernel_70901/1633189495.py:1: UserWarning: `Model.fit_generator` is deprecated and will be removed in a future version. Please use `Model.fit`, which supports generators.  
model.fit_generator(generator=x_train,steps_per_epoch=len(x_train),epochs=20,
```

```
119/119 [=====] - 1s 7ms/step - loss: 1.3736 - accuracy: 0.4259 - val_loss: 0.7573 - val_accuracy: 0.6667  
Epoch 2/20
```

```
119/119 [=====] - 1s 7ms/step - loss: 0.6477 - accuracy: 0.7525 - val_loss: 0.7432 - val_accuracy: 0.7667  
Epoch 3/20
```

```
119/119 [=====] - 1s 7ms/step - loss: 0.4472 - accuracy: 0.8131 - val_loss: 0.5949 - val_accuracy: 0.8000  
Epoch 4/20
```

```
119/119 [=====] - 1s 7ms/step - loss: 0.4017 - accuracy: 0.8519 - val_loss: 0.5183 - val_accuracy: 0.8667  
Epoch 5/20
```

```
119/119 [=====] - 1s 6ms/step - loss: 0.2610 - accuracy: 0.8990 - val_loss: 0.4658 - val_accuracy: 0.9000  
Epoch 6/20
```

```
119/119 [=====] - 1s 7ms/step - loss: 0.2626 - accuracy: 0.9108 - val_loss: 0.2314 - val_accuracy: 0.9000  
Epoch 7/20
```

```
119/119 [=====] - 1s 7ms/step - loss: 0.2177 - accuracy: 0.9226 - val_loss: 0.4094 - val_accuracy: 0.9000  
Epoch 8/20
```

```
119/119 [=====] - 1s 7ms/step - loss: 0.1487 - accuracy: 0.9512 - val_loss: 0.4178 - val_accuracy: 0.9333  
Epoch 9/20
```

```
119/119 [=====] - 1s 7ms/step - loss: 0.1261 - accuracy: 0.9529 - val_loss: 0.3710 - val_accuracy: 0.9333  
Epoch 10/20
```

```
119/119 [=====] - 1s 7ms/step - loss: 0.1261 - accuracy: 0.9529 - val_loss: 0.3710 - val_accuracy: 0.9333  
Epoch 11/20
```

```
119/119 [=====] - 1s 7ms/step - loss: 0.1235 - accuracy: 0.9529 - val_loss: 0.2879 - val_accuracy: 0.9000  
Epoch 12/20
```

```
119/119 [=====] - 1s 7ms/step - loss: 0.0820 - accuracy: 0.9731 - val_loss: 1.2046 - val_accuracy: 0.7000  
Epoch 13/20
```

```
119/119 [=====] - 1s 6ms/step - loss: 0.0780 - accuracy: 0.9731 - val_loss: 0.2134 - val_accuracy: 0.9667  
Epoch 14/20
```

```
119/119 [=====] - 1s 7ms/step - loss: 0.1159 - accuracy: 0.9596 - val_loss: 0.3745 - val_accuracy: 0.9000  
Epoch 15/20
```

```
119/119 [=====] - 1s 7ms/step - loss: 0.0644 - accuracy: 0.9731 - val_loss: 0.1958 - val_accuracy: 0.9333  
Epoch 16/20
```

```
119/119 [=====] - 1s 7ms/step - loss: 0.0581 - accuracy: 0.9781 - val_loss: 0.4044 - val_accuracy: 0.9000  
Epoch 17/20
```

```
119/119 [=====] - 1s 7ms/step - loss: 0.0992 - accuracy: 0.9697 - val_loss: 0.2571 - val_accuracy: 0.9333  
Epoch 18/20
```

```
119/119 [=====] - 1s 7ms/step - loss: 0.0534 - accuracy: 0.9832 - val_loss: 0.3824 - val_accuracy: 0.9667  
Epoch 19/20
```

```
119/119 [=====] - 1s 7ms/step - loss: 0.0410 - accuracy: 0.9815 - val_loss: 0.3097 - val_accuracy: 0.9667  
Epoch 20/20
```

```
119/119 [=====] - 1s 6ms/step - loss: 0.0281 - accuracy: 0.9933 - val_loss: 0.4102 - val_accuracy: 0.9000
```