

```

import tensorflow as tf
from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import Dense, Flatten
from tensorflow.keras.datasets import mnist
from sklearn.metrics import accuracy_score

(x_train, y_train), (x_test, y_test) = mnist.load_data()

x_train = x_train / 255.0
x_test = x_test / 255.0

model = Sequential([
    Flatten(input_shape=(28, 28)),
    Dense(128, activation='relu'),
    Dense(10, activation='softmax')
])


model.compile(optimizer='adam', loss='sparse_categorical_crossentropy', metrics=['accuracy'])

model.fit(x_train, y_train, epochs=5)

predictions = model.predict(x_test)
predicted_classes = tf.argmax(predictions, axis=1)

accuracy = accuracy_score(y_test, predicted_classes)
print(f'Accuracy: {accuracy:.4f}')

```

 Downloading data from <https://storage.googleapis.com/tensorflow/tf-keras-datasets/mnist.npz>
 11490434/11490434 0s 0us/step
 /usr/local/lib/python3.10/dist-packages/keras/src/layers/resizing/flatten.py:37: UserWarning: Do not pass an `input_shape`/`input_dim`
 super().__init__(**kwargs)
 Epoch 1/5
 1875/1875 14s 6ms/step - accuracy: 0.8744 - loss: 0.4416
 Epoch 2/5
 1875/1875 18s 5ms/step - accuracy: 0.9653 - loss: 0.1225
 Epoch 3/5
 1875/1875 7s 3ms/step - accuracy: 0.9776 - loss: 0.0776
 Epoch 4/5
 1875/1875 8s 4ms/step - accuracy: 0.9832 - loss: 0.0547
 Epoch 5/5
 1875/1875 6s 3ms/step - accuracy: 0.9875 - loss: 0.0429
 313/313 1s 2ms/step
 Accuracy: 0.9790