```
import tensorflow as tf
from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import Dense, Flatten
from tensorflow.keras.utils import to_categorical
(X_train, y_train), (X_test, y_test) = tf.keras.datasets.mnist.load_data()
mask_train = y_train < 6
mask_test = y_test < 6
X_train, y_train = X_train[mask_train], y_train[mask_train]
X_test, y_test = X_test[mask_test], y_test[mask_test]
X_train = X_train / 255.0
X_test = X_test / 255.0
y_train_cat = to_categorical(y_train)
y_test_cat = to_categorical(y_test)
model = Sequential([
    Flatten(input_shape=(28, 28)),
    Dense(128, activation='relu'),
    Dense(6, activation='softmax')
])

model.compile(optimizer='adam', loss='categorical_crossentropy', metrics=['accuracy'])
model.fit(X_train, y_train_cat, epochs=5, batch_size=128, validation_split=0.1, verbose=1)
test_loss, test_acc = model.evaluate(X_test, y_test_cat)
print(f"Hand Gesture Recognition Accuracy: {test_acc * 100:.2f}%")
```

```
Downloading data from https://storage.googleapis.com/tensorflow/tf-keras-datasets/mnist.npz
11490434/11490434 ━━━━━━━━━━━━━━━━━━━━ 0s 0us/step
/usr/local/lib/python3.11/dist-packages/keras/src/layers/reshaping/flatten.py:37: UserWarning: Do not pass an `input_shape`/`input_
  super().__init__(**kwargs)
Epoch 1/5
254/254 ━━━━━━━━━━━━━━━━━━━━ 3s 6ms/step - accuracy: 0.8586 - loss: 0.4657 - val_accuracy: 0.9717 - val_loss: 0.1030
Epoch 2/5
254/254 ━━━━━━━━━━━━━━━━━━━━ 1s 5ms/step - accuracy: 0.9684 - loss: 0.1053 - val_accuracy: 0.9789 - val_loss: 0.0775
Epoch 3/5
254/254 ━━━━━━━━━━━━━━━━━━━━ 1s 6ms/step - accuracy: 0.9787 - loss: 0.0711 - val_accuracy: 0.9783 - val_loss: 0.0773
Epoch 4/5
254/254 ━━━━━━━━━━━━━━━━━━━━ 3s 8ms/step - accuracy: 0.9844 - loss: 0.0522 - val_accuracy: 0.9847 - val_loss: 0.0553
Epoch 5/5
254/254 ━━━━━━━━━━━━━━━━━━━━ 2s 7ms/step - accuracy: 0.9888 - loss: 0.0376 - val_accuracy: 0.9828 - val_loss: 0.0545
189/189 ━━━━━━━━━━━━━━━━━━━━ 0s 2ms/step - accuracy: 0.9862 - loss: 0.0435
Hand Gesture Recognition Accuracy: 98.59%
```