

```
In [1]: # =====
# 1. TensorFlow
# =====
import tensorflow as tf

print("TensorFlow version:", tf.__version__)

# Create simple tensor and perform addition
a = tf.constant(5)
b = tf.constant(7)
c = tf.add(a, b)
print("TensorFlow Addition (5+7):", c.numpy())
```

TensorFlow version: 2.19.0  
TensorFlow Addition (5+7): 12

```
In [2]: # =====
# 2. Keras
# =====
from tensorflow import keras
from keras import datasets

# Load MNIST dataset
(train_images, train_labels), (test_images, test_labels) = datasets.mnist.load_data()
print("Keras MNIST dataset shapes:")
print("Training data:", train_images.shape, "Training labels:", train_labels.shape)
print("Testing data:", test_images.shape, "Testing labels:", test_labels.shape)
```

Keras MNIST dataset shapes:  
Training data: (60000, 28, 28) Training labels: (60000,)  
Testing data: (10000, 28, 28) Testing labels: (10000,)

```
In [3]: # =====
# 3. PyTorch
# =====
import torch

print("PyTorch version:", torch.__version__)

# Create a tensor
t = torch.tensor([[1, 2], [3, 4]], dtype=torch.float32)
print("PyTorch Tensor:\n", t)

# Check CUDA availability
print("CUDA available:", torch.cuda.is_available())
```

PyTorch version: 2.8.0+cpu  
PyTorch Tensor:  
tensor([[1., 2.],  
 [3., 4.]])  
CUDA available: False

In [ ]: