1)TensorFlow Test Program

In [1]:
```
import tensorflow as tf
```

In [2]:
```
print(tf.__version__)
```

```
2.5.0
```

In [3]:
```
print(tf.reduce_sum(tf.random.normal([1000,1000])))
```

```
tf.Tensor(1525.9521, shape=(), dtype=float32)
```

2)Keras Test Problem

In [4]:
```
from tensorflow import keras
```

In [5]:
```
from keras.datasets import mnist
from keras import datasets
```

In [6]:
```
(train_images, train_labels), (test_images, test_labels) = datasets.mnist.load_da
```

In [7]:
```
train_images.shape, test_images.shape
```

Out[7]:
```
((60000, 28, 28), (10000, 28, 28))
```

3)Theano Test Program

In [8]:
```
import numpy
import theano.tensor as T
from theano import function
```

```
WARNING (theano.configdefaults): g++ not available, if using conda: `conda inst
all m2w64-toolchain`
c:\users\adarsh\appdata\local\programs\python\python39\lib\site-packages\theano
\configdefaults.py:560: UserWarning: DeprecationWarning: there is no c++ compil
er.This is deprecated and with Theano 0.11 a c++ compiler will be mandatory
  warnings.warn("DeprecationWarning: there is no c++ compiler."
WARNING (theano.configdefaults): g++ not detected ! Theano will be unable to ex
ecute optimized C-implementations (for both CPU and GPU) and will default to Py
thon implementations. Performance will be severely degraded. To remove this war
ning, set Theano flags cxx to an empty string.
WARNING (theano.tensor.blas): Using NumPy C-API based implementation for BLAS f
unctions.
```

In [9]:
```
x = T.dscalar('x')
y = T.dscalar('y')
```

In [10]:
```
z = x + y
```

In [11]:
```
f = function([x, y], z)
f(5, 7)
```

Out[11]:
```
array(12.)
```

4)Test Program for PyTorch

In [12]:
```
import torch
import torch.nn as nn
```

In [13]:
```
print(torch.__version__)
```

```
1.12.1+cpu
```