

# Tensorflow Test Program

Installation of Tensorflow

```
In [34]: import tensorflow as tf  
from theano import tensor as T
```

Print out Tensorflow version

```
In [35]: print(tf.__version__)  
2.10.0
```

```
In [36]: print(tf.reduce_sum(tf.random.normal([1000,1000])))  
tf.Tensor(297.40326, shape=(), dtype=float32)
```

# Keras Test Program

```
In [ ]:
```

```
In [37]: from keras import datasets
```

Loading MNIST Data

```
In [38]: (train_images,train_labels),(test_images,test_labels)=datasets.mnist.load_data()
```

Check the dataset loaded

```
In [39]: train_images.shape,test_images.shape
```

```
Out[39]: ((60000, 28, 28), (10000, 28, 28))
```

# Theano Test Program

```
In [40]: import numpy
```

```
In [ ]:
```

```
In [41]: from theano import function
```

**Addition of two scalars**

Declaring Two Variables

```
In [42]: x = T.dscalar('x')
```

```
In [43]: y = T.dscalar('y')
```

summing up the two numbers

```
In [44]: z = x + y
```

```
In [45]: f = function([x,y],z)
```

```
In [46]: f(5,7)
```

```
Out[46]: array(12.)
```

## PyTorch Test Program

Importing torch

```
In [47]: import torch
```

```
In [48]: import torch.nn as nn
```

Print out PyTorch version

```
In [49]: print(torch.__version__)
```

2.1.0+cpu

```
In [ ]:
```