```
In [1]: !pip install theano
```

Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: theano in c:\users\admin\appdata\roaming\python\python39
\site-packages (1.0.5)
Requirement already satisfied: numpy>=1.9.1 in c:\programdata\anaconda3\lib\site-packag
es (from theano) (1.21.5)
Requirement already satisfied: scipy>=0.14 in c:\programdata\anaconda3\lib\site-package
s (from theano) (1.7.3)
Requirement already satisfied: six>=1.9.0 in c:\programdata\anaconda3\lib\site-packages
(from theano) (1.16.0)

```
In [7]: !pip install numpy scipy
        import theano
        from theano import *
        import theano.tensor as T
        import numpy as np
        import pandas as pd
        from theano import function
```

Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: numpy in c:\programdata\anaconda3\lib\site-packages (1.2
1.5)
Requirement already satisfied: scipy in c:\programdata\anaconda3\lib\site-packages (1.
7.3)

```
In [3]: #scalar variables
        v1 = T.dscalar()
        v2 = T.scalar()
        # subtraction
        sres = v1-v2
```

```
In [4]: #add
        ares = v1+v2
```

```
In [5]: #convert the results into functions
        calcsres = theano.function([v1,v2],sres)
        calcares = theano.function([v1,v2],ares)
        calcares(12,23)
        calcsres(13,12)
        x = T.dmatrix('x')
        y = T.dmatrix('y')
```

```
In [6]: # addition
        z = x+y
        func = function([x,y],z)
        m1 = [ [1,2], [3,4] ]
        m2 = [ [4,5], [6,7] ]
        func(m1,m2)
```

```
Out[6]: array([[ 5.,  7.],
               [ 9., 11.]])
```

```
In [ ]:
```