Tensorflow Basics

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

In [2]:
```
hello = tf.constant('Hello World')
```

In [3]:
```
type(hello)
```

Out[3]:
```
tensorflow.python.framework.ops.Tensor
```

In [4]:
```
sess = tf.Session()
```

In [5]:
```
sess
```

Out[5]:
```
<tensorflow.python.client.session.Session at 0x10f9180d0>
```

In [6]:
```
sess.run(hello)
```

Out[6]:
```
b'Hello World'
```

In [7]:
```
# Operations
```

In [11]:
```
x = tf.constant(2)
y = tf.constant(3)

with tf.Session() as sess:
    print('Operations with Constants')
    print('Addition:', sess.run(x+y))
    print('Substraction:', sess.run(x-y))
    print('Multiplication:', sess.run(x*y))
    print('Division:', sess.run(x/y))
```

```
Operations with Constants
Addition: 5
Substraction: -1
Multiplication: 6
Division: 0.6666666666666666
```

In [12]:
```
y = tf.placeholder(tf.int32)
```

In [13]:
```
x = tf.placeholder(tf.int32)
```

In [16]:
```
add = tf.add(x,y)
sub = tf.subtract(x,y)
mul = tf.multiply(x,y)
```

In [19]:
```
d = {x:20,y:30}
```

In [20]:
```
with tf.Session() as sess:
    print('Operations with Placeholders')
    print('addition', sess.run(add, feed_dict={x:20,y:30}))
    print('Subtraction', sess.run(sub, feed_dict=d))
    print('Multiply', sess.run(mul, feed_dict=d))
```

```
Operations with Placeholders
addition 50
Subtraction -10
Multiply 600
```

In [21]:
```
import numpy as np
```

In [22]:
```
a = np.array([[5.0,5.0]])
b = np.array([[2.0],[2.0]])
```

In [23]:
```
a.shape
```

Out[23]:
```
(1, 2)
```

In [24]:
```
b.shape
```

Out[24]:
```
(2, 1)
```

In [25]:
```
mat1 = tf.constant(a)
mat2 = tf.constant(b)
```

In [26]:
```
matrix_multi = tf.matmul(mat1,mat2)
```

In [27]:
```
with tf.Session() as sess:
    result = sess.run(matrix_multi)
    print(result)
```

```
[[20.]]
```

In [ ]:
```

```