AI_DL_tensorflow_basics_display_tensor_values

Display Values: tf.constant

Using with tf.Session() as ...

In [1]:

```
import tensorflow as tf
```

In [2]:

```
# Declare a constant

a = tf.constant(10)
```

In [3]:

```
a
```

Out[3]:

```
<tf.Tensor 'Const:0' shape=() dtype=int32>
```

In [4]:

```
print (a)
```

```
Tensor("Const:0", shape=(), dtype=int32)
```

In [6]:

```
# To display the value of a constant
# MUST RUN A SESSION

with tf.Session() as sess:
    results = sess.run(a)
```

In [7]:

```
# THEN PRINT THE RESULT
print (results)
```

```
10
```

NOTES: Combine two statements

In [8]:

```
with tf.Session() as sess:
    print(sess.run(a))
```

```
10
```

NOTES: DO NOTHING without "results = ..." OR "print(...)

In [9]:

```
with tf.Session() as sess:
    sess.run(a)
```

Using tf.InteractiveSession()

In [35]:

```
import tensorflow as tf
```

In [36]:

```
# Start a tf.InteractiveSession

sess = tf.InteractiveSession()
```

In [37]:

```
# Declare a constant
b = tf.constant(20)
```

In [38]:

```
# RUN THE SESSION AND DISPLAY THE VALUE
sess.run(b)
```

Out[38]:

```
20
```

In [40]:

```
# Close the session
sess.close()
```

Display Values: tf.Variables

Using with tf.Session() as ...

In [19]:

```
import tensorflow as tf
```

In [20]:

```
aTensor = tf.random_uniform ((3, 3), 0, 1)

aTfVar_1 = tf.Variable(initial_value=aTensor)

anInitializer = tf.global_variables_initializer()
```

In [21]:

```
with tf.Session() as sess:
    sess.run(anInitializer)
    results = sess.run(aTfVar_1)
```

In [22]:

```
print (results)
```

```
[[ 0.63682449  0.17394161  0.0241282 ]
 [ 0.23146713  0.09733915  0.20626318]
 [ 0.89795744  0.16502631  0.20043254]]
```

Using tf.InteractiveSession()

In [41]:

```
# Start a tf.InteractiveSession

sess = tf.InteractiveSession()
```

In [42]:

```
aTensor = tf.random_uniform ((3, 3), 0, 1)

aTfVar_2 = tf.Variable(initial_value=aTensor)

anInitializer_2 = tf.global_variables_initializer()
```

In [43]:

```
# RUN THE SESSION AND INITIALIZE THE VARIABLE
sess.run(anInitializer_2)
```

In [44]:

```
# RUN THE SESSION AND DISPLAY THE VALUE
sess.run(aTfVar_2)
```

Out[44]:

```
array([[ 0.03256738,  0.30198658,  0.70613682],
       [ 0.63597274,  0.44134843,  0.18394756],
       [ 0.0870167 ,  0.94280708,  0.79577935]], dtype=float32)
```

In [45]:

```
# Close the session
sess.close()
```

In [ ]:

```

```

In [ ]:

```

```

Display Values: tf.placeholder

In [63]:

```
import tensorflow as tf
```

In [64]:

```
x = tf.placeholder(tf.float32)
```

Example 1: Using with tf.Session() as ...

In [79]:

```
# DO NOTHING
with tf.Session() as session:
    session.run([x], feed_dict={x:[10]})
```

In [80]:

```
with tf.Session() as session:
    result = session.run([x], feed_dict={x:[10]})

print(result)
```

```
[array([ 10.], dtype=float32)]
```

Example 1: Using with tf.InteractiveSession()

In [81]:

```
# Start a tf.InteractiveSession

sess = tf.InteractiveSession()
```

In [82]:

```
sess. run([x], feed_dict={x:[20]})
```

Out[82]:

```
[array([ 20.], dtype=float32)]
```

In [83]:

```
sess.close()
```

Example 2: Using with tf.Session() as ...

In [84]:

```
x = tf.placeholder(tf.float32, None)
```

In [85]:

```
y = x * 2
```

In [86]:

```
with tf.Session() as session:
    result = session.run([y], feed_dict={x:[1, 2, 3]})

print(result)
```

```
[array([ 2.,  4.,  6.], dtype=float32)]
```

Example 2: Using with tf.InteractiveSession()

In [87]:

```
# Start a tf.InteractiveSession

sess = tf.InteractiveSession()
```

In [88]:

```
sess.run([y], feed_dict={x:[1, 3, 5]})
```

Out[88]:

```
[array([  2.,   6.,  10.], dtype=float32)]
```

In [89]:

```
sess.close()
```

In [ ]:

```

```