

```
import tensorflow as tf
print(tf.__version__)
```

```
2.12.0
```

```
scalar=tf.constant(7)
print(scalar)
print(scalar.ndim)
```

```
tf.Tensor(7, shape=(), dtype=int32)
0
```

```
vector=tf.constant([10,10])
print(vector)
print(vector.ndim)
```

```
tf.Tensor([10 10], shape=(2,), dtype=int32)
1
```

```
matrix=tf.constant([
    [10,11],[12,13]
])
print(matrix)
print(matrix.ndim)
```

```
tf.Tensor(
[[10 11]
 [12 13]], shape=(2, 2), dtype=int32)
2
```

```
basic_tensor=tf.constant([[10,11],[12,13]])
print(basic_tensor)
```

```
tf.Tensor(
[[10 11]
 [12 13]], shape=(2, 2), dtype=int32)
```

```
print(basic_tensor+10)
print(basic_tensor-10)
print(basic_tensor*10)
print(basic_tensor/10)
```

```
tf.Tensor(
[[20 21]
 [22 23]], shape=(2, 2), dtype=int32)
tf.Tensor(
[[0 1]
 [2 3]], shape=(2, 2), dtype=int32)
tf.Tensor(
[[100 110]
 [120 130]], shape=(2, 2), dtype=int32)
tf.Tensor(
[[1 1]
 [1 1]], shape=(2, 2), dtype=int32)
```

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```
[[1.2 1.3]], shape=(2, 2), dtype=float64)
```

```
tensor_011=tf.constant([[2,2],[4,4]])
```

```
tensor_012=tf.constant([[2,3],[4,5]])
```

```
print(tf.matmul(tensor_011,tensor_012))
```

```
tf.Tensor(  
[[12 16]  
[24 32]], shape=(2, 2), dtype=int32)
```

```
tensor_013 = tf.constant([  
[1,2,3],  
[4,5,6],  
[7,8,9]  
,dtype='float32')
```

```
print(tf.reduce_min(tensor_013))
```

```
print(tf.reduce_max(tensor_013))
```

```
print(tf.reduce_sum(tensor_013))
```

```
tf.Tensor(1.0, shape=(), dtype=float32)  
tf.Tensor(9.0, shape=(), dtype=float32)  
tf.Tensor(45.0, shape=(), dtype=float32)
```

```
print(tf.sqrt(tensor_013))
```

```
print(tf.square(tensor_013))
```

```
print(tf.math.log(tensor_013))
```

```
tf.Tensor(  
[[1.          1.4142135 1.7320508]  
[2.          2.236068  2.4494898]  
[2.6457512 2.828427  3.          ]], shape=(3, 3), dtype=float32)  
tf.Tensor(  
[[ 1.  4.  9.]  
[16. 25. 36.]  
[49. 64. 81.]], shape=(3, 3), dtype=float32)  
tf.Tensor(  
[[0.          0.6931472 1.0986123]  
[1.3862944 1.609438  1.7917595]  
[1.9459102 2.0794415 2.1972246]], shape=(3, 3), dtype=float32)
```