```
import tensorflow as tf
```

```
print(tf.__version__)
```

```
2.12.0
```

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

```
print(scalar)
```

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

```
print(scalar.ndim)
```

```
0
```

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

```
print(vector)
```

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

```
print(vector.ndim)
```

```
1
```

```
print(matrix)
```

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

```
print(matrix.ndim)
```

```
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)
```

```
tf.Tensor(
[[20 21]
 [22 23]], shape=(2, 2), dtype=int32)
```

```
print(basic_tensor - 10)
```

```
tf.Tensor(
[[0 1]
 [2 3]], shape=(2, 2), dtype=int32)
```

```
print(basic_tensor * 10)
```

```
tf.Tensor(
[[100 110]
 [120 130]], shape=(2, 2), dtype=int32)
```

```
print(basic_tensor / 10)
```

```
tf.Tensor(
[[1.  1.1]
 [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))
```

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

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

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

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

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

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

```
tf.Tensor(
[[1.        1.4142135 1.7320508]
 [2.        2.236068  2.4494898]
 [2.6457512 2.828427  3.       ]], shape=(3, 3), dtype=float32)
```

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

```
tf.Tensor(
[[ 1.  4.  9.]
 [16. 25. 36.]
 [49. 64. 81.]], shape=(3, 3), dtype=float32)
```

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

```
tf.Tensor(
[[0.        0.6931472 1.0986123]
 [1.3862944 1.609438  1.7917595]
 [1.9459102 2.0794415 2.1972246]], shape=(3, 3), dtype=float32)
```