tf.trace

Aliases:

- `tf.linalg.trace`
- `tf.trace`

```
trace(
    x,
    name=None
)
```

Defined in `tensorflow/python/ops/math_ops.py`.

See the guide: Math > Matrix Math Functions

Compute the trace of a tensor `x`.

`trace(x)` returns the sum along the main diagonal of each inner-most matrix in x. If x is of rank `k` with shape `[I, J, K, ..., L, M, N]`, then output is a tensor of rank `k-2` with dimensions `[I, J, K, ..., L]` where

`output[i, j, k, ..., l] = trace(x[i, j, i, ..., l, :, :])`

For example:

```
x = tf.constant([[1, 2], [3, 4]])
tf.trace(x)  # 5

x = tf.constant([[1, 2, 3],
                 [4, 5, 6],
                 [7, 8, 9]])
tf.trace(x)  # 15

x = tf.constant([[[1, 2, 3],
                  [4, 5, 6],
                  [7, 8, 9]],
                 [[-1, -2, -3],
                  [-4, -5, -6],
                  [-7, -8, -9]]])
tf.trace(x)  # [15, -15]
```

Args:

- `x`: tensor.
- `name`: A name for the operation (optional).

Returns:

The trace of input tensor.

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