tf.diag

```
diag(
    diagonal,
    name=None
)
```

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

See the guide: Math > Matrix Math Functions

Returns a diagonal tensor with a given diagonal values.

Given a `diagonal`, this operation returns a tensor with the `diagonal` and everything else padded with zeros. The diagonal is computed as follows:

Assume `diagonal` has dimensions [D1,..., Dk], then the output is a tensor of rank 2k with dimensions [D1,..., Dk, D1,..., Dk] where:

`output[i1,..., ik, i1,..., ik] = diagonal[i1, ..., ik]` and 0 everywhere else.

For example:

```
# 'diagonal' is [1, 2, 3, 4]
tf.diag(diagonal) ==> [[1, 0, 0, 0]
                       [0, 2, 0, 0]
                       [0, 0, 3, 0]
                       [0, 0, 0, 4]]
```

Args:

- `diagonal`: A `Tensor`. Must be one of the following types: `float32`, `float64`, `int32`, `int64`, `complex64`, `complex128`. Rank k tensor where k is at most 3.
- `name`: A name for the operation (optional).

Returns:

A `Tensor`. Has the same type as `diagonal`.

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Support

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Release Notes

Stack Overflow

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