# tf.split

```
split(
    value,
    num_or_size_splits,
    axis=0,
    num=None,
    name='split'
)
```

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

See the guide: Tensor Transformations > Slicing and Joining

Splits a tensor into sub tensors.

If `num_or_size_splits` is an integer type, `num_split`, then splits `value` along dimension `axis` into `num_split` smaller tensors. Requires that `num_split` evenly divides `value.shape[axis]`.

If `num_or_size_splits` is not an integer type, it is presumed to be a Tensor `size_splits`, then splits `value` into `len(size_splits)` pieces. The shape of the `i`-th piece has the same size as the `value` except along dimension `axis` where the size is `size_splits[i]`.

For example:

```
# 'value' is a tensor with shape [5, 30]
# Split 'value' into 3 tensors with sizes [4, 15, 11] along dimension 1
split0, split1, split2 = tf.split(value, [4, 15, 11], 1)
tf.shape(split0)  # [5, 4]
tf.shape(split1)  # [5, 15]
tf.shape(split2)  # [5, 11]
# Split 'value' into 3 tensors along dimension 1
split0, split1, split2 = tf.split(value, num_or_size_splits=3, axis=1)
tf.shape(split0)  # [5, 10]
```

## Args:

- `value`: The `Tensor` to split.
- `num_or_size_splits`: Either a 0-D integer `Tensor` indicating the number of splits along split_dim or a 1-D integer `Tensor` integer tensor containing the sizes of each output tensor along split_dim. If a scalar then it must evenly divide `value.shape[axis]`; otherwise the sum of sizes along the split dimension must match that of the `value`.
- `axis`: A 0-D `int32` `Tensor`. The dimension along which to split. Must be in the range `[-rank(value), rank(value))`. Defaults to 0.
- `num`: Optional, used to specify the number of outputs when it cannot be inferred from the shape of `size_splits`.
- `name`: A name for the operation (optional).

## Returns:

if `num_or_size_splits` is a scalar returns `num_or_size_splits` `Tensor` objects; if `num_or_size_splits` is a 1-D Tensor returns `num_or_size_splits.get_shape[0]` `Tensor` objects resulting from splitting `value`.

Raises:

- `ValueError`: If `num` is unspecified and cannot be inferred.

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*Last updated November 2, 2017.*