

tf.metrics.mean_tensor

```
mean_tensor(  
    values,  
    weights=None,  
    metrics_collections=None,  
    updates_collections=None,  
    name=None  
)
```

Defined in [tensorflow/python/ops/metrics_impl.py](#).

Computes the element-wise (weighted) mean of the given tensors.

In contrast to the `mean` function which returns a scalar with the mean, this function returns an average tensor with the same shape as the input tensors.

The `mean_tensor` function creates two local variables, `total_tensor` and `count_tensor` that are used to compute the average of `values`. This average is ultimately returned as `mean` which is an idempotent operation that simply divides `total` by `count`.

For estimation of the metric over a stream of data, the function creates an `update_op` operation that updates these variables and returns the `mean`. `update_op` increments `total` with the reduced sum of the product of `values` and `weights`, and it increments `count` with the reduced sum of `weights`.

If `weights` is `None`, weights default to 1. Use weights of 0 to mask values.

Args:

- `values`: A `Tensor` of arbitrary dimensions.
- `weights`: Optional `Tensor` whose rank is either 0, or the same rank as `values`, and must be broadcastable to `values` (i.e., all dimensions must be either 1, or the same as the corresponding `values` dimension).
- `metrics_collections`: An optional list of collections that `mean` should be added to.
- `updates_collections`: An optional list of collections that `update_op` should be added to.
- `name`: An optional variable_scope name.

Returns:

- `mean`: A float `Tensor` representing the current mean, the value of `total` divided by `count`.
- `update_op`: An operation that increments the `total` and `count` variables appropriately and whose value matches `mean_value`.

Raises:

- `ValueError`: If `weights` is not `None` and its shape doesn't match `values`, or if either `metrics_collections` or `updates_collections` are not a list or tuple.

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