tf.metrics.mean_iou

```
mean_iou(
    labels,
    predictions,
    num_classes,
    weights=None,
    metrics_collections=None,
    updates_collections=None,
    name=None
)
```

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

Calculate per-step mean Intersection-Over-Union (mIOU).

Mean Intersection-Over-Union is a common evaluation metric for semantic image segmentation, which first computes the IOU for each semantic class and then computes the average over classes. IOU is defined as follows: IOU = true_positive / (true_positive + false_positive + false_negative). The predictions are accumulated in a confusion matrix, weighted by `weights`, and mIOU is then calculated from it.

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_iou`.

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

Args:

- `labels`: A `Tensor` of ground truth labels with shape [batch size] and of type `int32` or `int64`. The tensor will be flattened if its rank > 1.
- `predictions`: A `Tensor` of prediction results for semantic labels, whose shape is [batch size] and type `int32` or `int64`. The tensor will be flattened if its rank > 1.
- `num_classes`: The possible number of labels the prediction task can have. This value must be provided, since a confusion matrix of dimension = [num_classes, num_classes] will be allocated.
- `weights`: Optional `Tensor` whose rank is either 0, or the same rank as `labels`, and must be broadcastable to `labels` (i.e., all dimensions must be either `1`, or the same as the corresponding `labels` dimension).
- `metrics_collections`: An optional list of collections that `mean_iou` should be added to.
- `updates_collections`: An optional list of collections `update_op` should be added to.
- `name`: An optional variable_scope name.

Returns:

- `mean_iou`: A `Tensor` representing the mean intersection-over-union.
- `update_op`: An operation that increments the confusion matrix.

Raises:

- `ValueError`: If `predictions` and `labels` have mismatched shapes, or if `weights` is not `None` and its shape

doesn't match `predictions`, or if either `metrics_collections` or `updates_collections` are not a list or tuple.

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