tf.reduce_logsumexp

```
reduce_logsumexp(
    input_tensor,
    axis=None,
    keep_dims=False,
    name=None,
    reduction_indices=None
)
```

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

See the guide: Math > Reduction

Computes log(sum(exp(elements across dimensions of a tensor))).

Reduces `input_tensor` along the dimensions given in `axis`. Unless `keep_dims` is true, the rank of the tensor is reduced by 1 for each entry in `axis`. If `keep_dims` is true, the reduced dimensions are retained with length 1.

If `axis` has no entries, all dimensions are reduced, and a tensor with a single element is returned.

This function is more numerically stable than log(sum(exp(input))). It avoids overflows caused by taking the exp of large inputs and underflows caused by taking the log of small inputs.

For example:

```
x = tf.constant([[0., 0., 0.], [0., 0., 0.]])
tf.reduce_logsumexp(x)  # log(6)
tf.reduce_logsumexp(x, 0)  # [log(2), log(2), log(2)]
tf.reduce_logsumexp(x, 1)  # [log(3), log(3)]
tf.reduce_logsumexp(x, 1, keep_dims=True)  # [[log(3)], [log(3)]]
tf.reduce_logsumexp(x, [0, 1])  # log(6)
```

Args:

- `input_tensor`: The tensor to reduce. Should have numeric type.
- `axis`: The dimensions to reduce. If `None` (the default), reduces all dimensions. Must be in the range `[-rank(input_tensor), rank(input_tensor))`.
- `keep_dims`: If true, retains reduced dimensions with length 1.
- `name`: A name for the operation (optional).
- `reduction_indices`: The old (deprecated) name for axis.

Returns:

The reduced tensor.

Last updated November 2, 2017.

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