

tf.edit_distance

```
edit_distance(  
    hypothesis,  
    truth,  
    normalize=True,  
    name='edit_distance'  
)
```

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

See the guide: [Math > Sequence Comparison and Indexing](#)

Computes the Levenshtein distance between sequences.

This operation takes variable-length sequences (**hypothesis** and **truth**), each provided as a **SparseTensor**, and computes the Levenshtein distance. You can normalize the edit distance by length of **truth** by setting **normalize** to true.

For example, given the following input:

```
# 'hypothesis' is a tensor of shape `[2, 1]` with variable-length values:  
# (0,0) = ["a"]  
# (1,0) = ["b"]  
hypothesis = tf.SparseTensor(  
    [[0, 0, 0],  
     [1, 0, 0]],  
    ["a", "b"]  
    (2, 1, 1))  
  
# 'truth' is a tensor of shape `[2, 2]` with variable-length values:  
# (0,0) = []  
# (0,1) = ["a"]  
# (1,0) = ["b", "c"]  
# (1,1) = ["a"]  
truth = tf.SparseTensor(  
    [[0, 1, 0],  
     [1, 0, 0],  
     [1, 0, 1],  
     [1, 1, 0]],  
    ["a", "b", "c", "a"],  
    (2, 2, 2))  
  
normalize = True
```

This operation would return the following:

```
# 'output' is a tensor of shape `[2, 2]` with edit distances normalized  
# by 'truth' lengths.  
output ==> [[inf, 1.0], # (0,0): no truth, (0,1): no hypothesis  
            [0.5, 1.0]] # (1,0): addition, (1,1): no hypothesis
```

Args:

- **hypothesis**: A **SparseTensor** containing hypothesis sequences.

- `truth`: A `SparseTensor` containing truth sequences.
- `normalize`: A `bool`. If `True`, normalizes the Levenshtein distance by length of `truth`.
- `name`: A name for the operation (optional).

Returns:

A dense `Tensor` with rank `R - 1`, where `R` is the rank of the `SparseTensor` inputs `hypothesis` and `truth`.

Raises:

- `TypeError`: If either `hypothesis` or `truth` are not a `SparseTensor`.

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