# tf.lbeta

```
lbeta(
    x,
    name='lbeta'
)
```

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

See the guide: Math > Basic Math Functions

Computes $ln(|Beta(x)|)$, reducing along the last dimension.

Given one-dimensional `z = [z_0,...,z_{K-1}]`, we define

$$Beta(z) = \prod_j Gamma(z_j) / Gamma(\sum_j z_j)$$

And for `n + 1` dimensional `x` with shape `[N1, ..., Nn, K]`, we define

$$lbeta(x)[i1, \ldots, in] = Log(|Beta(x[i1, \ldots, in, :])|)$$

.

In other words, the last dimension is treated as the `z` vector.

Note that if `z = [u, v]`, then $Beta(z) = int_0^1 t^{u-1}(1-t)^{v-1}dt$, which defines the traditional bivariate beta function.

If the last dimension is empty, we follow the convention that the sum over the empty set is zero, and the product is one.

## Args:

- `x`: A rank `n + 1` `Tensor`, `n >= 0` with type `float`, or `double`.
- `name`: A name for the operation (optional).

## Returns:

The logarithm of $|Beta(x)|$ reducing along the last dimension.

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