tf.nn.softmax_cross_entropy_with_logits

```
softmax_cross_entropy_with_logits(
    _sentinel=None,
    labels=None,
    logits=None,
    dim=-1,
    name=None
)
```

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

See the guide: Neural Network > Classification

Computes softmax cross entropy between `logits` and `labels`.

Measures the probability error in discrete classification tasks in which the classes are mutually exclusive (each entry is in exactly one class). For example, each CIFAR-10 image is labeled with one and only one label: an image can be a dog or a truck, but not both.

NOTE: While the classes are mutually exclusive, their probabilities need not be. All that is required is that each row of `labels` is a valid probability distribution. If they are not, the computation of the gradient will be incorrect.

If using exclusive `labels` (wherein one and only one class is true at a time), see `sparse_softmax_cross_entropy_with_logits`.

WARNING: This op expects unscaled logits, since it performs a `softmax` on `logits` internally for efficiency. Do not call this op with the output of `softmax`, as it will produce incorrect results.

`logits` and `labels` must have the same shape, e.g. `[batch_size, num_classes]` and the same dtype (either `float16`, `float32`, or `float64`).

Note that to avoid confusion, it is required to pass only named arguments to this function.

Args:

- `_sentinel`: Used to prevent positional parameters. Internal, do not use.
- `labels`: Each row `labels[i]` must be a valid probability distribution.
- `logits`: Unscaled log probabilities.
- `dim`: The class dimension. Defaulted to -1 which is the last dimension.
- `name`: A name for the operation (optional).

Returns:

A 1-D `Tensor` of length `batch_size` of the same type as `logits` with the softmax cross entropy loss.

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