tf.contrib.framework.nest.map_structure_up_to

```
map_structure_up_to(
    shallow_tree,
    func,
    *inputs
)
```

Defined in `tensorflow/python/util/nest.py`.

Applies a function or op to a number of partially flattened inputs.

The `inputs` are flattened up to `shallow_tree` before being mapped.

Use Case:

Sometimes we wish to apply a function to a partially flattened sequence (for example when the function itself takes sequence inputs). We achieve this by specifying a shallow structure, `shallow_tree` we wish to flatten up to.

The `inputs`, can be thought of as having the same structure as `shallow_tree`, but with leaf nodes that are themselves tree structures.

This function therefore will return something with the same base structure as `shallow_tree`.

Examples:

```
ab_tuple = collections.namedtuple("ab_tuple", "a, b")
op_tuple = collections.namedtuple("op_tuple", "add, mul")
inp_val = ab_tuple(a=2, b=3)
inp_ops = ab_tuple(a=op_tuple(add=1, mul=2), b=op_tuple(add=2, mul=3))
out = map_structure_up_to(inp_val, lambda val, ops: (val + ops.add) * ops.mul,
                          inp_val, inp_ops)

# Output is: ab_tuple(a=6, b=15)
```

```
data_list = [[2, 4, 6, 8], [[1, 3, 5, 7, 9], [3, 5, 7]]]
name_list = ['evens', ['odds', 'primes']]
out = map_structure_up_to(
    name_list,
    lambda name, sec: "first_{}_{}".format(len(sec), name),
    name_list, data_list)

# Output is: ['first_4_evens', ['first_5_odds', 'first_3_primes']]
```

Args:

- `shallow_tree`: a shallow tree, common to all the inputs.
- `func`: callable which will be applied to each input individually.
- `*inputs`: arbitrarily nested combination of objects that are compatible with shallow_tree. The function `func` is applied to corresponding partially flattened elements of each input, so the function must support arity of `len(inputs)`.

Raises:

- `TypeError`: If `shallow_tree` is a sequence but `input_tree` is not.
- `TypeError`: If the sequence types of `shallow_tree` are different from `input_tree`.
- `ValueError`: If the sequence lengths of `shallow_tree` are different from `input_tree`.

Returns:

result of repeatedly applying `func`, with same structure as `shallow_tree`.

Last updated November 2, 2017.