tf.contrib.layers.weighted_sum_from_feature_columns

```
weighted_sum_from_feature_columns(
    columns_to_tensors,
    feature_columns,
    num_outputs,
    weight_collections=None,
    trainable=True,
    scope=None
)
```

Defined in `tensorflow/contrib/layers/python/layers/feature_column_ops.py`.

See the guide: Layers (contrib) > Feature columns

A tf.contrib.layers style linear prediction builder based on FeatureColumn.

Generally a single example in training data is described with feature columns. This function generates weighted sum for each num_outputs. Weighted sum refers to logits in classification problems. It refers to prediction itself for linear regression problems.

Example:

```
# Building model for training
feature_columns = (
    real_valued_column("my_feature1"),
    ...
)
columns_to_tensor = tf.parse_example(...)
logits = weighted_sum_from_feature_columns(
    columns_to_tensors=columns_to_tensor,
    feature_columns=feature_columns,
    num_outputs=1)
loss = tf.nn.sigmoid_cross_entropy_with_logits(labels=labels,
                                               logits=logits)
```

Args:

- `columns_to_tensors`: A mapping from feature column to tensors. 'string' key means a base feature (not-transformed). It can have FeatureColumn as a key too. That means that FeatureColumn is already transformed by input pipeline. For example, `inflow` may have handled transformations.
- `feature_columns`: A set containing all the feature columns. All items in the set should be instances of classes derived from FeatureColumn.
- `num_outputs`: An integer specifying number of outputs. Default value is 1.
- `weight_collections`: List of graph collections to which weights are added.
- `trainable`: If `True` also add variables to the graph collection `GraphKeys.TRAINABLE_VARIABLES` (see tf.Variable).
- `scope`: Optional scope for variable_scope.

Returns:

A tuple containing:

- A Tensor which represents predictions of a linear model.
- A dictionary which maps feature_column to corresponding Variable.
- A Variable which is used for bias.

Raises:

- `ValueError`: if FeatureColumn cannot be used for linear predictions.

Last updated November 2, 2017.