

Specifications: WeightedAverageCalculator

In addition to the obvious specifications illustrated in the UML class diagram and the specifications for the parent class and interface, the `WeightedAverageCalculator` class must satisfy the following specifications.

1. The explicit value constructor must create a `WeightedAverageCalculator` with the given weights.
 - 1.1. The `weights` parameter maps from the labels used to identify `LabeledDouble` objects to values that will be used when calculating the weighted average.
 - 1.2. The `weights` attribute must be an alias of the `weights` parameter.
2. The default constructor must create a `WeightedAverageCalculator` that has a `weights` attribute that is `null`.
3. You may assume that the `calculate()` method is passed a `List` that does not contain any `null` elements. (Note: The `List` may contain missing elements.)
4. The `calculate()` method must not have any side effects. That is, it must not change the parameters that it is passed in any way and it must not change any attributes in any way.
5. The `calculate()` method must return the weighted average of the elements in the `List` it is passed.
 - 5.1. The `label` of the result must equal the parameter named `resultLabel`.
 - 5.2. The `data` parameter contains the values to use in the calculation.
 - 5.2.1. If the `data` is `null` then this method must throw a `SizeException`.
 - 5.2.2. If an element of `data` is missing (i.e., has a `value` attribute that is `null`) then that element must be ignored in the calculation.
 - 5.3. The `weights` attribute contains the weights to use in the calculation.
 - 5.3.1. If the `weights` attribute is `null` then all weights used in the calculation must be 1.
 - 5.3.2. You may assume that all of the elements of `weights` (if it is non-`null`) are non-negative.
 - 5.3.3. If there is no weight associated with a `label` in an element of `data` then a weight of 0 must be used in the calculation for that element.
 - 5.4. The `calculate()` method must use the `performIntermediateCalculations()` method.
6. The `performIntermediateCalculations()` method must calculate the numerator and the denominator used in the calculation of the weighted average in a fashion that is consistent with the specifications for the `calculate()` method.
 - 6.1. It must return the numerator.
 - 6.2. It must store the denominator in the attribute named `denominator`.