Specifications: `LeafGrade`

In addition to the obvious specifications illustrated in the UML class diagram, the `LeafGrade` class must satisfy the following specifications.

1. `LeafGrade` objects must be immutable.
2. If a constructor or factory method is passed a `key` that is `null` or empty (i.e., `""`) then the constructor/method must throw an `IllegalArgumentException`.
3. The `LeafGrade(String key)` constructor must construct a `LeafGrade` object with a `value` attribute of `0.0`.
4. The `parseLeafGrade(String key, String value)` method must return a `LeafGrade` object with the given key and a numeric value that corresponds to the `String` representation of the value that it is passed.
   4.1. If the `String` parameter named `value` is `null` then the `LeafGrade` that is returned must have a missing value.
   4.2. If the `String` parameter named `value` does not represent a valid `double` then the `LeafGrade` that is returned must have a missing value.
   4.3. If the `String` parameter named `key` is invalid then it must throw an `IllegalArgumentException`.