

Set Calculator – Project Description

Interface: Element

Calculates add action for two elements.

Calculates multiply action for two elements.

Create a clone of an Element.

Abstract class: Numerator (implements Element)

Server of: Real, Rational.

Converts a rational number/ real number into double.

Class: Real (extends Numerator)

Implements: transformAdd, transformMul, clone.

Server of: Set, Calculator, Rational.

Add & multiply two real numbers.

Add & multiply real and rational numbers.

Verify String is a legal input and converts it to a Real object.

Class: Rational (extends Numerator)

Implements: transformAdd, transformMul, clone.

Server of: Set and Calculator.

Client of: Real.

Add & multiply two rational numbers.

Verify String is a legal input and converts it to a Rational object.

Class: Set (implements Element)

Implements: transformAdd, transformMul, clone.

Client of: Set, Rational, Real.

Server of: Calculator.

Inserts Element to set.

Removes Element from set.

Returns set size.

Calculates unification of two sets.

Calculates intersection of two sets.

Calculates difference of two sets.

Calculates power of a set.

Verifies if a set contains an element

Verifies if an element exists in a set or it's elements.

Calculates add between all the set's elements with a number.

Calculates multiply between all the set's elements with a number.

Clones set into a new set.

Verify String is a legal input and converts it to a Set object.

Class: Calculator (Main)

Client of: Set, Rational, Element.

Receives user input.

Verifies legality of user input.

Perform insert, remove, unify, intersect, difference, power, member, deep existence, size, transformAdd, transformMul actions on a set.

Performs transformAdd, transformMul on numbers (real and rational).