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import components.naturalnumber.NaturalNumber;
import components.naturalnumber.NaturalNumber2;
import components.simplereader.SimpleReader;
import components.simplereader.SimpleReader1L;
import components.simplewriter.SimpleWriter;
import components.simplewriter.SimpleWriter1L;
import components.utilities.Reporter;
import components.xmltree.XMLTree;
import components.xmltree.XMLTree1;

/**
 * Program to evaluate XMLTree expressions of {@code int}.
 *
 * @author Put your name here
 */
public final class XMLTreeNNEvaluationEvaluator {

    /**
     * Private constructor so this utility class cannot be instantiated.
     */
    private XMLTreeNNEvaluationEvaluator() {

    }

    /**
     * Evaluate the given expression.
     *
     * @param exp
     *         the {@code XMLTree} representing the expression
     * @return the value of the expression
     * @requires <pre>
     * [exp is a subtree of a well-formed XML arithmetic expression] and
     * [the label of the root of exp is not "expression"]
     * </pre>
     * @ensures evaluate = [the value of the expression]
     */
    private static NaturalNumber evaluate(XMLTree exp) {
        assert exp != null : "Violation of: exp is not null";

        NaturalNumber num1 = new NaturalNumber2();
        NaturalNumber num2 = new NaturalNumber2();
        NaturalNumber result = new NaturalNumber2();
        NaturalNumber temp = new NaturalNumber2();
        String label = exp.label();

        if (exp.numberOfChildren() > 0) {
            num1.copyFrom(evaluate(exp.child(0)));
            if (exp.numberOfChildren() > 1) {
                num2.copyFrom(evaluate(exp.child(1)));
            }
        }
    }
}

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        if (label.equals("plus")) {
            temp.copyFrom(num1);
            temp.add(num2);
            result.copyFrom(temp);
        } else if (label.equals("minus")) {
            temp.copyFrom(num1);
            // Making sure result is not negative
            if (num2.compareTo(num1) > 0) {
                Reporter.fatalErrorToConsole(
                    "NaturalNumber cannot be negative.");
            } else {
                temp.subtract(num2);
                result.copyFrom(temp);
            }
        } else if (label.equals("times")) {
            temp.copyFrom(num1);
            temp.multiply(num2);
            result.copyFrom(temp);
        } else if (label.equals("divide")) {
            // Making sure we do not divide by 0
            if (num2.toInt() == 0) {
                Reporter.fatalErrorToConsole("Cannot divide by zero.");
            } else {
                temp.copyFrom(num1);
                temp.divide(num2);
                result.copyFrom(temp);
            }
        }
    } else {
        result.setFromString(exp.attributeValue("value"));
    }

    return result;
}

/**
 * Main method.
 *
 * @param args
 *         the command line arguments
 */
public static void main(String[] args) {
    SimpleReader in = new SimpleReader1L();
    SimpleWriter out = new SimpleWriter1L();

    out.print("Enter the name of an expression XML file: ");
    String file = in.nextLine();
    while (!file.equals("")) {
        XMLTree exp = new XMLTree1(file);
        out.println(evaluate(exp.child(0)));
        out.print("Enter the name of an expression XML file: ");
    }
}

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        file = in.nextLine();
    }

    in.close();
    out.close();
}

}
```