

MDSD- xText Math Compiler

Status

The math compiler is working and makes use of both external calls and functional style. The grammar is based on my Math Interpreter assignment.

Extension: .mathc

Links

xText: <https://github.com/thevinge/MDSD-MathCompiler/blob/master/org.xtext.mdsd.mathcompiler/src/org/xtext/mdsd/MathCompiler.xtext>

Generator Xtend: <https://github.com/thevinge/MDSD-MathCompiler/blob/master/org.xtext.mdsd.mathcompiler/src/org/xtext/mdsd/generator/MathCompilerGenerator.xtend>

Example

```
Compiler.mathc  MathProgram.java

external power(base, exp)
external crazyMath(value)
result "Simple" is 4*(5+15)+20
result "External" is 4+power(10,4) - crazyMath(2)
result "Advanced" is let y = (4*2) in (let y = 6 in (2+4+y))*y;
```

The output from the DSL:

```
Compiler.mathc  MathProgram.java

// Generated file
import java.util.*;

public class MathProgram {

    public static interface Externals {
        public int power(int base,int exp);
        public int crazyMath(int value);
    }

    private Externals externals;

    public MathProgram(Externals _externals){
        externals = _externals;
    }

    public void compute(){
        System.out.println("Simple = " + (4 * (5 + 15) + 20));
        System.out.println("External = " + (4 + externals.power(10,4) - externals.crazyMath(2)));
        System.out.println("Advanced = " + (((2 + 4 + 6) * (4 * 2)));
    }
}
```