Valuator

# Task Description

A folder contains a number of files. The files potentially can be huge (> 1GB). Each file holds a set of operations (addition, subtraction, multiplication and division) serialized to XML format. The operations may be simple (operands are constants) or complex (some of operands are expressions).

Implement a C++ application which calculates top-level operations from input files and store results in output files in XML format. Use best programming practices based on your experience. You can use boost or other external libraries. If build requires extra steps – provide readme file with build instructions. The solution size in ZIP archive should be smaller than 1 MB (otherwise the solution will not be considered).

You can implement the solution with different level of completeness depending on the time which you spend for the solution.

# Variations

Next parameters may change:

* Changes in existing operations
* New operations
* Format of input/output files

# Interface

Application name: **Valuator**

The application should accept 2 arguments:

1. *<path to input folder>* – the folder where input files are located
2. *<path to output folder>* – the folder where results should be stored

Output files have to be named by the next pattern

*<output\_filename>*.xml = *<input\_filename>*\_result.xml

Sample: data.xml data\_result.xml

# Input / Output

Sample of input/output file with **simple** operations:

|  |  |
| --- | --- |
| data0001.xml | data0001\_result.xml |
| <expressions>  <addition id="1">  <item>2</item>  <item>3</item>  <item>4</item>  </addition>  <subtraction id="2">  <minuend>3</minuend>  <subtrahend>2</subtrahend>  </subtraction>  <multiplication id="3">  <factor>5</factor>  <factor>6</factor>  <factor>8</factor>  </multiplication>  <division id="4">  <dividend>54</dividend>  <divisor>9</divisor>  </division>  </expressions> | <expressions>  <result id="1">9</result>  <result id="2">1</result>  <result id="3">240</result>  <result id="4">6</result>  </expressions> |

Sample of input/output file with **complex** operations:

|  |  |
| --- | --- |
| data0002.xml | data0002\_result.xml |
| <expressions>  <addition id="10" complex="true">  <item>2</item>  <item>3</item>  <item>  <subtraction>  <minuend>7</minuend>  <subtrahend>3</subtrahend>  </subtraction>  </item>  </addition>  <subtraction id="11">  <minuend>3</minuend>  <subtrahend>2</subtrahend>  </subtraction>  <multiplication id="12">  <factor>5</factor>  <factor>6</factor>  <factor>8</factor>  </multiplication>  <multiplication id="13" complex="true">  <factor>  <addition>  <item>2</item>  <item>3</item>  <item>4</item>  </addition>  </factor>  <factor>6</factor>  <factor>  <multiplication>  <factor>3</factor>  <factor>4</factor>  <factor>5</factor>  <factor>10</factor>  <factor>56</factor>  </multiplication>  </factor>  </multiplication>  <division id="14" complex="true">  <dividend>54</dividend>  <divisor>  <addition>  <item>3</item>  <item>6</item>  </addition>  </divisor>  </division>  </expressions> | <expressions>  <result id="10">9</result>  <result id="11">1</result>  <result id="12">240</result>  <result id="13">1814400</result>  <result id="14">6</result>  </expressions> |

# Time

Estimated time for implementation is **one day**.

Time window for implementation is **one week**.