Mathml – an XML driven calculator

# Description

A windows console application that reads an xml file and performs mathematical calculations for the users.

Use case

1. The user double clicks Mathml.exe
2. A console window appears
3. Displays calculations to user
4. Closes when the user presses ENTER

# Example XML

<Operations>

<Add>

<Description>Joe;SUM;TURN10</Description>

<Value1>40</Value1>

<Value2>2</Value2>

</Add>

<Multiply>

<Description>Sam;MULTIPLY;TURN10</Description>

<Value1>2</Value1>

<Value2>3</Value2>

</Multiply>

</Operations>

# Example output

“**Username** – **OperationName** – **Value1** <**OperationOperator**> **Value2**”

Joe – SUM – 40 + 2 = 42

Sam – MULTIPLY – 3 \* 2 = 6

# Valid Operation types

* Add
  + Adds two numbers
  + **OperationOperator**: ‘+’
* Subtract
  + Subtracts Value2 from Value1
  + **OperationOperator**: ‘-’
* Multiply
  + Multiplies two numbers
  + **OperationOperator**: ‘\*’
* Divide
  + Divides two numbers
  + **OperationOperator**: ‘/’

# XML “schema”

Each node under the Operations node is a single Operation.

An Operation contains the following attributes:

* Description
  + Semi-Colon delimited string containing the following values
    - 0 – **Username**
    - 1 – **OperationName**
    - 2 – Miscellaneous info
* **Value1**
  + The first value for the operation
* **Value2**
  + The second value for the operation

# Implementation requirements

* Your implementation should be robust enough to handle new types of operations in the future – for example the ‘Power’ operation could raise Value1 to the Value2’th power.
* Your implementation should allow for the data to be input in a different format in the future – for example math.json instead of math.xml

# Summary

Write a windows console application that

1. Deserializes the provided xml file ‘math.mxl’
2. Parses each operation and performs it
3. Outputs a message describing the operation to the user

Please provide any appropriate unit tests as well