

# ARITHMETIC: A SPEECHWEB ARITHMETIC CALCULATOR

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## Application Category

## Developer Information

<b>Name</b>	<b>David Dufour</b>
<b>Email or webpage (optional)</b>	dufour11@uwindsor.ca
<b>Education level when created the application</b>	1 <sup>st</sup> year undergraduate student
<b>Institution</b>	University Of Windsor

## Application Information

<b>Application Name</b>	<b>Arithmetic</b>
<b>Date created</b>	June 2008
<b>Link to the application</b>	<a href="http://cs.uwindsor.ca/~dufour11/Arithmetic/Arithmetic.xml">http://cs.uwindsor.ca/~dufour11/Arithmetic/Arithmetic.xml</a>
<b>Link to the code (optional)</b>	<a href="http://cs.uwindsor.ca/~dufour11/Arithmetic/Arithmetic.m">http://cs.uwindsor.ca/~dufour11/Arithmetic/Arithmetic.m</a>
<b>Link to the grammar (optional)</b>	<a href="http://cs.uwindsor.ca/~dufour11/Arithmetic/Arithmetic.jsgf">http://cs.uwindsor.ca/~dufour11/Arithmetic/Arithmetic.jsgf</a>
<b>What is the application about?</b>	This application performs simple arithmetic functions such as addition, subtraction, multiplication, division, and exponents. It can also check if two statements are equal such as '2 + 2 = 4 * 1', returning correct.
<b>Why was the application created?</b>	This application was created to show how quickly a context free grammar could be created using the W/AGE system with little experience.
<b>How was the application created?</b>	Arithmetic was created using the W/AGE environment created in Miranda. A dictionary, attribute rules and syntax and semantics were defined as in a grammar, leaving the rest of the work to W/AGE.
<b>What is the programming language used?</b>	Miranda, a functional programming language with W/AGE header.
<b>How does the application work?</b>	This application works b
<b>What is good about the application?</b>	Arithmetic is good because it is a simple example demonstrating the ease the W/AGE environment brings to developing SpeechWeb applications and other areas where natural language needs processing.
<b>Problems faced while creating the application and solutions</b>	The biggest problem with this application was becoming familiar with the W/AGE environment. Once I was though, creating this application was faster and easier than previous applications created. There is also the problem of left-recursion not being supported. This will hopefully be solved in the newer version of W/AGE being developed.
<b>How can other developers create a similar application?</b>	Developers can create a similar application by looking up the code and learning the techniques used to parse the questions and returning the appropriate answers. Developers can also use the manuals on the SpeechWeb developers' webpage.
<b>Other comments</b>	The developers' webpage is at: <a href="http://cs.uwindsor.ca/~speechweb/developers.html">http://cs.uwindsor.ca/~speechweb/developers.html</a> Suggestions and questions can be forwarded to my email