Computation in BSL

We can replace

$$(+ \ n_1 \ n_2)$$

with

$$n_1 + n_2$$

if n_1 and n_2 are both numbers

Computation in BSL

We can replace

$$(\mathbf{f}\ \ \mathbf{a_1}\ \ \mathbf{a_2})$$

with

the result of calling $\mathbf{f}$ with $\mathbf{a_1}$ and $\mathbf{a_2}$

if $\mathbf{a_1}$ and $\mathbf{a_2}$ are atomic data

This generalizes to n-ary functions with n arguments

The Design Recipe

1. Analyze the problem, describe the data

2. Write a signature, header, and purpose statement

3. Create examples

4. Inventory and strategize

5. Apply the strategy

6. Write tests

The Design Recipe

the structural design recipe

	atomic (numbers, strings, images, etc)	intervals (of numbers) and enumerations (of atoms)	compound data (structures, finite fixed-size trees)	self-referential data descriptions (N, lists)	mutually-referential data descriptions (trees, forests)	functions as data	processing complex data in parallel
extract description(s) of data from problem statement							
articulate a concise purpose statement and signature							
work through functional examples							
create an outline							
fill in the outline							
turn examples into test suite							

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