

Metaprogramming (cont)

Meta

- referring to itself or to the conventions of its genre

- showing or suggesting an explicit awareness of itself or oneself as a member of its category

- cleverly self-referential

A term often describing the "most effective tactic available" based on in-depth knowledge of a system

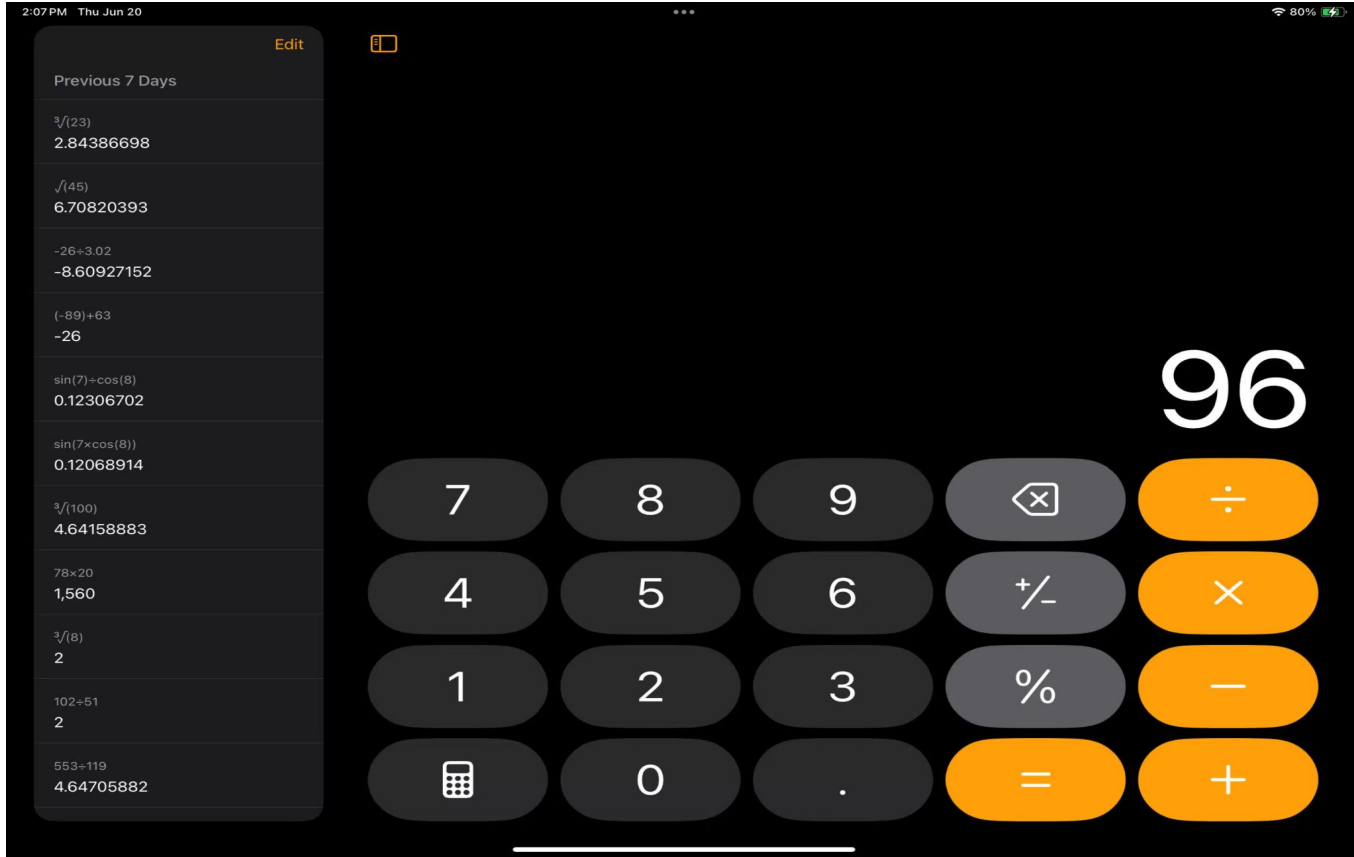
MetaProgramming You've Seen

```
class Bottle
  attr_accessor :ounces
  attr_reader :label

  def initialize(label, ounces)
    @label = label
    @ounces = ounces
  end
end
```

Write getters/setters for you!

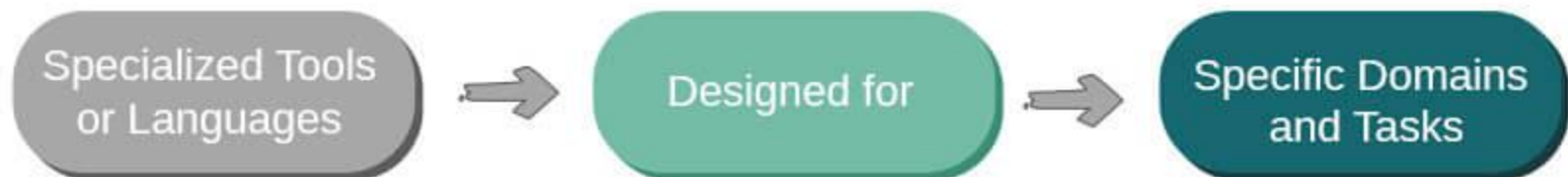
Calculator App



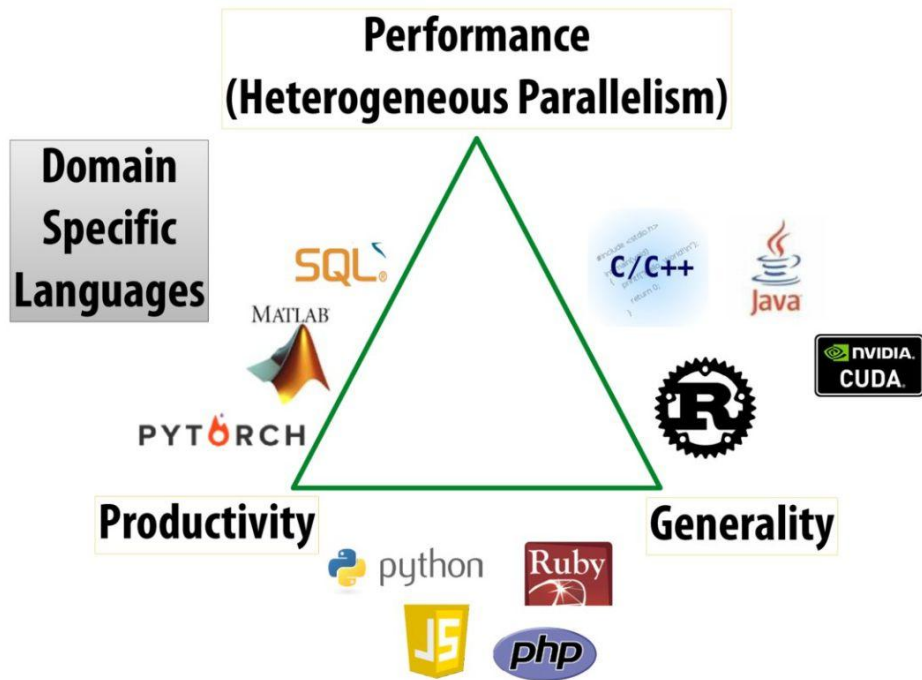
Domain-Specific Language

- Often abbreviated as DSL.
- Created, usually in-house, to solve a known problem.
- You say what you want and the program figures out the best way to make it happen.

Domain-Specific Languages



Way forward \Rightarrow domain-specific languages



Meta-programming

Ultimately, we want DSLs customized for different domains (verticals) that we're targeting. A meta-programming system (MPS) is a key part of using the DSLs as a technique of writing programs that can manipulate other programs or themselves. MPS allows developers to design their own extensible DSLs and use them to build end-user applications.

Learn how Jaxon is using DSLs at [www.jaxon.ai/dsail](https://jaxon.ai/dsail)

Groovy DSL Example

```
// Usage Examples
def result = 5.feet + 6.inches
println result // Output: 5.5 feet

// Convert the result
def convertedResult = result.meters
println convertedResult // Output: Converted value in meters

def result2 = 2.yards + 12.inches
println result2 // Output: 2.333 yards

def result21 = 2.yards - 12.inches
println result21

def result3 = 1.miles + 500.feet
println result3.feet // Output: 6050.0 feet
```