Goals of 6.00

Prepare freshmen and sophomores with no prior programming experience for entry into Course 6

Help students feel justifiably confident of their ability to write small and medium sized programs

Understand how to map problems into a computational framework

Position students to compete successfully for UROPs and summer jobs

Declarative knowledge is composed of statements of fact

"A good health care plan improves the quality of medical care while saving money"

"*y* is the square root of *x* if and only if *y**y = x*"

Imperative knowledge is about how to accomplish something. Think of it as recipe.

1) **Start with a guess, *g***

2) **If *g*g* is close enough to *x*, then g is a good approximation of the square root of *x***

3) **Otherwise, create a new guess by averaging *g* and *x/g*. I.e., $g_{new} = (g_{old} + x/g_{old})/2$**

4) **Using this new guess, go back to step 2**

Treat data and instructions as the same thing.
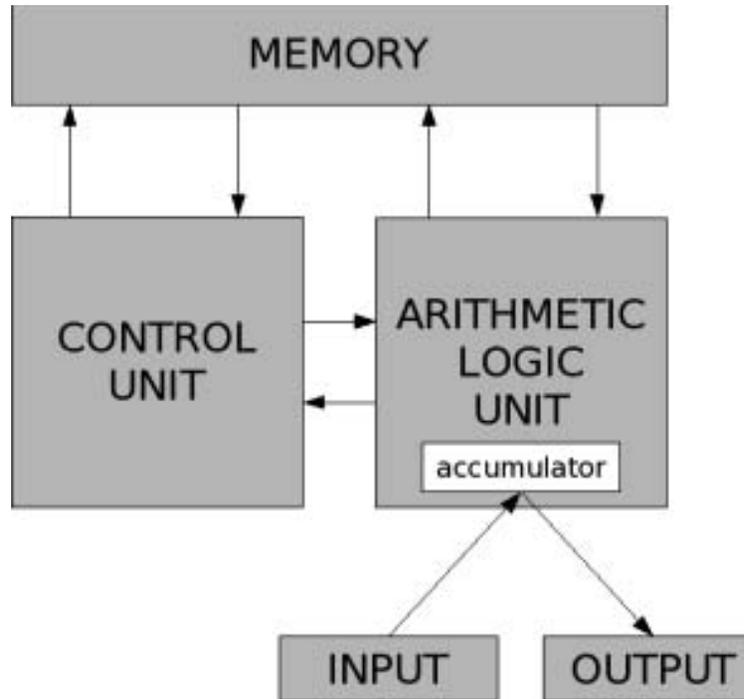
Syntax: which sequences of characters and symbols constitute a well-formed string

Static semantics: which well-formed strings have a meaning

Semantics: what that meaning is

Interpreted

source code ➔checker➔interpreter ➔output

Compiled

source code ➔checker/compiler ➔object code
➔interpreter ➔output

MIT OpenCourseWare
http://ocw.mit.edu

6.00SC Introduction to Computer Science and Programming
Spring 2011