Paradigm

A pattern of thinking that is frequently difficult to change.

A world view.
Objective

To learn three major programming models that complement the procedural and OO models:

• Functional paradigm

• Declarative/logic paradigm

• Concurrent paradigm
Programming language

• Functional paradigm — Scheme

• Declarative/logic paradigm — Prolog

• Concurrent paradigm — Java and C++
Motivation

A good background in different programming languages has given me the ability to think outside the box of one language style or another. Without this background, I would not be as valuable to my decidedly practically-minded company—even though we do not generally use theoretically interesting languages.

— John Prevost, ArsDigita Corporation
Computer Science and Programming
Demo Scheme

The read – eval – print loop.
Lambda expression

A lambda expression evaluates to a function.

\[(\text{lambda } (x) \ (\* \ x \ x))\]

Function
Lambda expression

A lambda expression evaluates to a function.

\( (\text{lambda} \ (x) \ (\ast \ x \ x)) \)

Parameter list
Quilt pattern class exercise