Object-oriented Scala
Is this a DSL?

Marbulous
What does this Scala code do?
Can you come up with better names for these functions?

```scala
def f1(strings: Seq[String]): String =
  strings mkString "\n"

def f2(strings1: Seq[String], strings2: Seq[String]): Seq[String] =
  strings1 ++ strings2

def f3(strings1: Seq[String], strings2: Seq[String]): Seq[String] = {
  val tmp = strings1 zip strings2
  tmp map (p => p._1 + p._2)
}
Block-based layout

HTML / CSS

LaTeX
Block-based layout

Inspired by Chapter 10 of *Programming in Scala, 2nd edition*

```plaintext
helloworld
  (sequential)

hello
  (stacked)

world
```
Object-oriented Scala

Be on the lookout for:

- How to do object-oriented programming in Scala
- How to use object-oriented features for DSLs
- Good principles for object-oriented programming
Design / implementation challenge

class Block(val contents: Seq[String]) {
    def above(other: Block): Block = …
    def nextTo(other: Block): Block = …
    override def toString = …
}

object Block {
    def apply(contents: List[String]) = …
    def apply(s: String) = …
    def apply(c: Char, width: Int, height: Int) = …
}

trait BlockHelpers {
    import scala.language.implicitConversions
    implicit def string2Block(s: String): Block = …
}

trait CheckerChars {
    val blackSquare = "█"
    val redSquare = Console.RED + "█" + Console.RESET
}

object Test extends App with BlockHelpers with CheckerChars {
    println("hello" above "world")
    …
}
Next assignment

PicoNot!

Re-design Picobot syntax, and implement your syntax as an internal Scala DSL.