**From Stack Machine to Register Machine**

Translate each of these stack machine instructions into register machine:

Bipush(c : Int)

Iadd

Imul

Iload(slot : Int)

Istore(slot : Int)

using register machine instructions

1. with arbitrary addressing
2. assuming arithmetic operations are done only on registers

In both cases, assume special registers

* SP for stack pointer - current top of stack
* FP for frame pointer - first non-parameter local variable

Concrete example:

[def](http://scala-lang.org) f(x : Int, y : Int) = {

[val](http://scala-lang.org) z = x + y

z \* x

}

[def](http://scala-lang.org) g(u : Int) = {

[val](http://scala-lang.org) v = u + 3

f(u,v) + 5

}