

Compiling Scheme to Java

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Long-term agenda

- Low-level transforms
- Virtual machines
- Garbage collection
- Type systems
- More macro systems(?)

Compiling to Java

- Value classes and a run-time environment
- Mapping constructs from Scheme to Java

Value.java

Language

```
<exp> ::= <const>
| <var>
| <prim>
| (lambda (<var> ...) <exp>)
| (if <exp> <exp> <exp>)
| (set! <var> <exp>)
| (let ((<var> <exp>) ...) <exp>)
| (letrec ((<var> <lam>)) <exp>)
| (begin <exp> ...)
| (<exp> <exp> ...)
```

<int>

<prim>

(lambda (<var> . . .)
 <exp>)

<var>

```
(if <exp1>  
  <exp2>  
  <exp3>)
```

(set! <var> <exp>)

(<exp0> <exp1> ...)

Doing better