Porting A Simple Language To The JVM

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Goals

- investigate capabilities of the Java Virtual Machine (JVM)
- Java bytecode generation
- processing a simple programming language
  - intermediate representation (i.e. abstract syntax tree)
  - semantic verification
  - code generation
- dynamic loading and dynamic method invokation in Java

The Language – Basics

- inspired by the "compiler construction" course at TU Vienna
- but slightly modified
  - function handling
  - array handling
- simple type system
  - integer
  - array of integer
- typical language elements
  - function calls
  - branches
  - variable/array access (r/w)
  - `main()` function

The Language – Listing

```
incr(a : int)
  return a + 1;
end;

main()
  return incr(incr(1));
end;
```

Live Demonstration

Switch to command line...