- write once
- compile once ← anywhere
- run anywhere ← you have a VM
- compile to bytecode
        ↓
    runs on
    VM

- object oriented
- syntax similar to C++
- hides low level
- extensive library

- variables
  - primitives
    - integers
      byte   8   -128 -127
      short   16   -32768 -32767
      int   32   ±2 billion
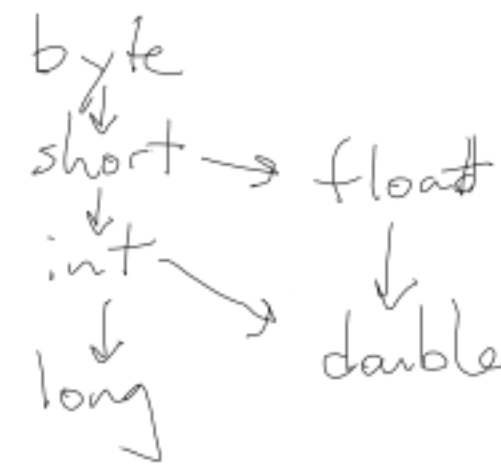   long   64   ±9e18
    - floating point
      float   32
      double 64
    - others
      char
      boolean

- references
  - arrays
  - objects

byte
 ↓
short → float
 ↓   ↓
int   ↓
 ↓   ↓
long   double

int fare = (int) 42.0;
              ↑
            convert
            even though
            less precise

- java.lang.String
- java.lang.System
- java.io.PrintStream
    - type of System.out
- java.io.InputStream
    - type of System.in
- java.util.Scanner
    - wraps an input stream
    - provides nicer parsing methods

```
int x = keyboard.nextInt();      // "12"
String s = keyboard.nextLine();
```

$$System.in \xrightarrow{byte} Scanner \xrightarrow{int}$$
keyboard