Zawinski's Law:

“Every program attempts to expand until it can read mail. Those programs which cannot so expand are replaced by ones which can.” Coined by Jamie Zawinski (who called it the “Law of Software Envelopment”) to express his belief that all truly useful programs experience pressure to evolve into toolkits and application platforms (the mailer thing, he says, is just a side effect of that). It is commonly cited, though with widely varying degrees of accuracy.

- The Hacker's Dictionary, Jargon File version 4.4.7
Java 1.5

- It is coming
- Beta is available on the web right now
- Lots of useful and helpful changes
- A summary today using slides from Sun
  - They left out some of the most useful things, standard and easy to use mechanisms for input / output
- Also an email from APCS development committee on what is likely to be adapted, probably next year
Improved Output

- Java 1.5 has a C style printf method
- printf can be used to format text output

```java
out.printf("%s \n", "a string"); // strings
out.printf("%d \n", 1212); // ints
out.printf("%f \n", 123.1234); // real numbers
```
Formatting with printf

```
out.printf("%.2f \n", 123.1199);
    // results in 123.12 being output

out.printf("%5.3f \n", 4.2399);
    // results in 4.240 being output

The 5 in the 5.2 has no real effect
```
More Formatting with printf

out.printf("%20s \n", "a string");
out.printf("%-20s \n", "a string");

%20 = column width of 20 spaces default left aligned

- signals right aligned
Old Input

- old style input using Java standard classes as opposed to a third party class

```java
BufferedReader keyboard = new BufferedReader(
    new InputStreamReader(System.in));
try
{
    String str = keyboard.readLine();
    int n = Integer.parseInt(str);
    System.out.println(n);
}
catch(Exception e)
{
    System.out.println("An error occurred while" + " attempting to read: " + e);
}
// GACK!!!
New Input

Scanner keyboard = Scanner.create(System.in);

int n = keyboard.nextInt();
double d = keyboard.nextDouble();

// Ahhh
// On to the slides from Sun