Starting at 9:05

```
System.out.print();
System.out.println();
System.out.print(123);      ⇒ 123
System.out.print("123");    ⇒ 123
System.out.print(1 + 2);    ⇒ 2
```

Data Types

Input

Data Types

	Ice	Water	Vapor
	Solid	Liquid	Gas
container :	tray	glass	cylinder

Data printed ⇒ Numbers, Text

Numbers

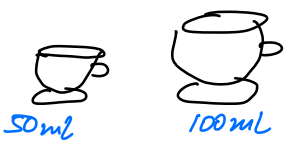
- Integer (int) } Integers
- long (long)
- Float (float) } Decimal numbers

↳ Double (double) ✓

Integers ⇒ {∞, −3, −2, −1, 0, 1, 2, 3, ... ∞}

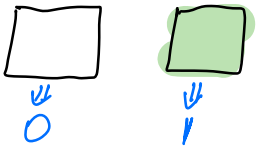
Decimals ⇒ {2.03, 3.11, −7.15, −9.88}

Shop ⇒ Coffee ≤ 50ml



Computer stores data in 0s and 1s

Switch

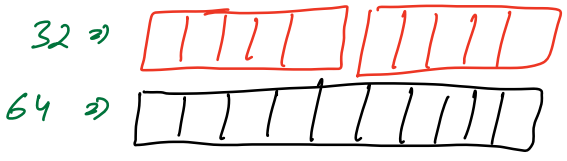


Bit ⇒ 0/1

Range of data

int ⇒ 32 bits

long ⇒ 64 bits



wasting memory

int ⇒ 32 bits

long ⇒ 64 bits

$$-10^9 \lesssim -2^{31} \le \text{int} \le 2^{31}-1 \lesssim 10^9$$

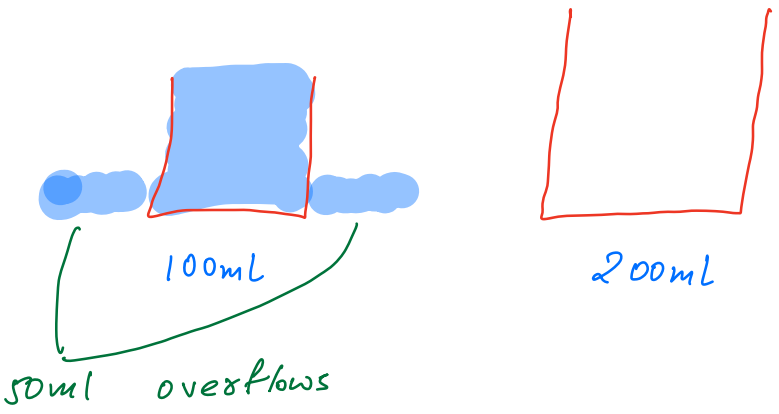
$$-10^{18} \lesssim -2^{63} \le \text{long} \le 2^{63}-1 \lesssim 10^{18}$$

float ⇒ 32 bits Low precision

double ⇒ 64 bits High precision

Text ⇒ String

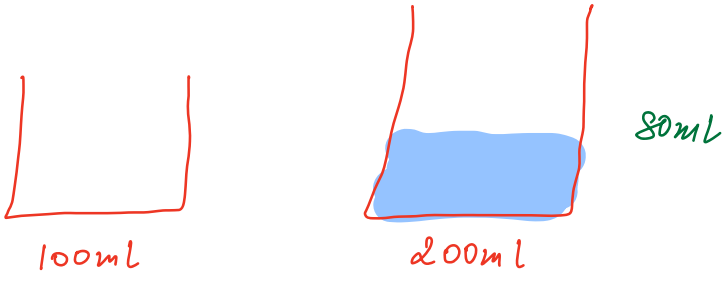
Integer Overflow



32 bit
int
can't store 10^{12}
Random value

64 bit
long
10^{12}

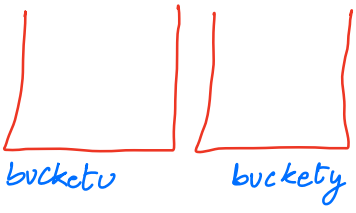
Typecasting

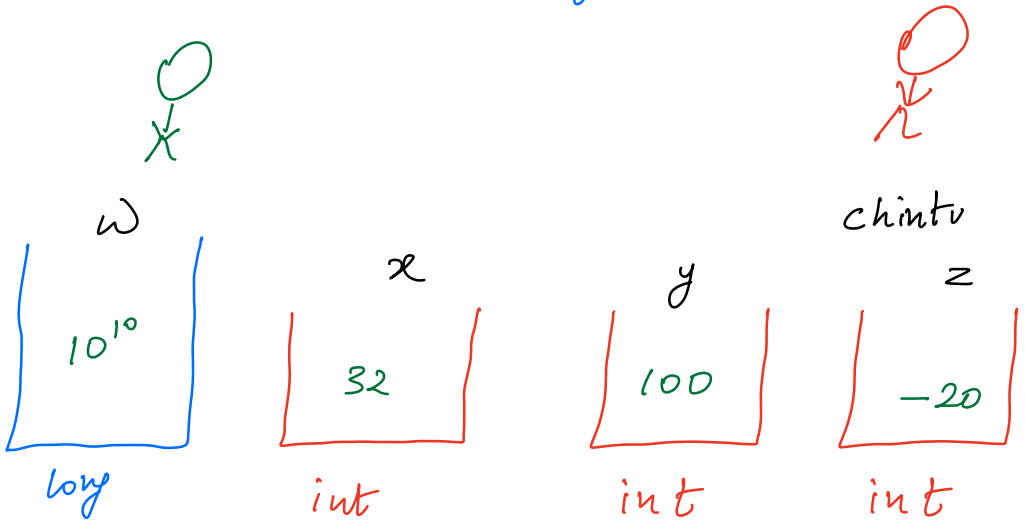


Smaller → bigger

bigger → Smaller

Variables

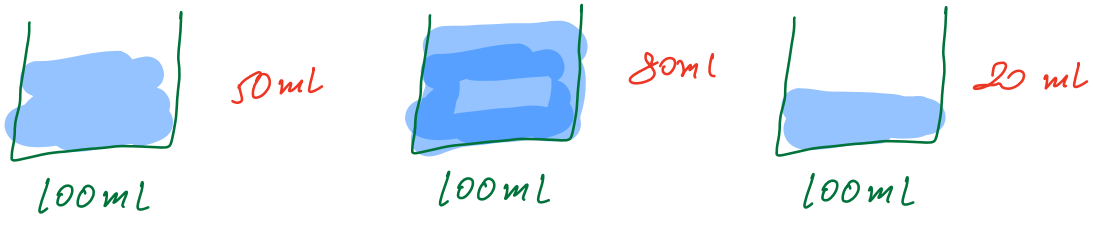


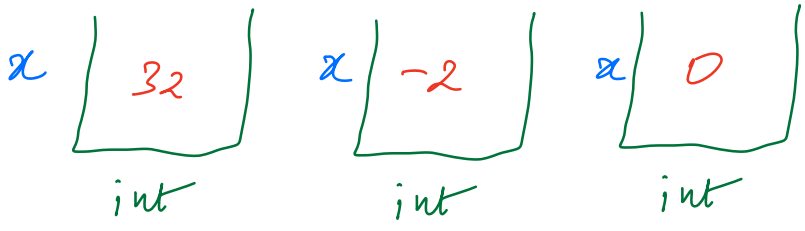



```
int   x;
int   y;
long  z;
float w;
```

```
String s;
```

double v;






```
int x;
x = 32;
```

```
long w;
w = 10000000000l;
```

```
float f;
f = 1.23f;
```

```
double d;
d = 3.14172857;
```

Syntax ⇒ Rules

```
long w;
w = 10000000000;
```

See what is in w ⇒ not 10^{10}

Break 10:30

Code : https://www.interviewbit.com/snippet/7d91d8bc3ba317cd71a2/