Starting at 7:05 am

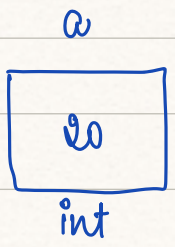
Enjoy the song !!

Today's content

1. Revision
2. Variable usage rules
3. Rules of Naming a variable
4. Categories of Data
5. Int vs long
6. Typecasting
7. Taking input from user

Quiz 8.

```
int a = 20;
```




```
int x = 10;
```


```
int x = 20;
```

Error:

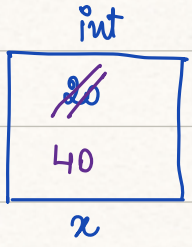
Two variables cannot have same name

```
System.out.println(x);
```

Quiz 9. update the value of variable

```
int x = 20;
```

→ `System.out.println(x); //20`



→ `x = 40;`

`System.out.println(x); //40`

Output:

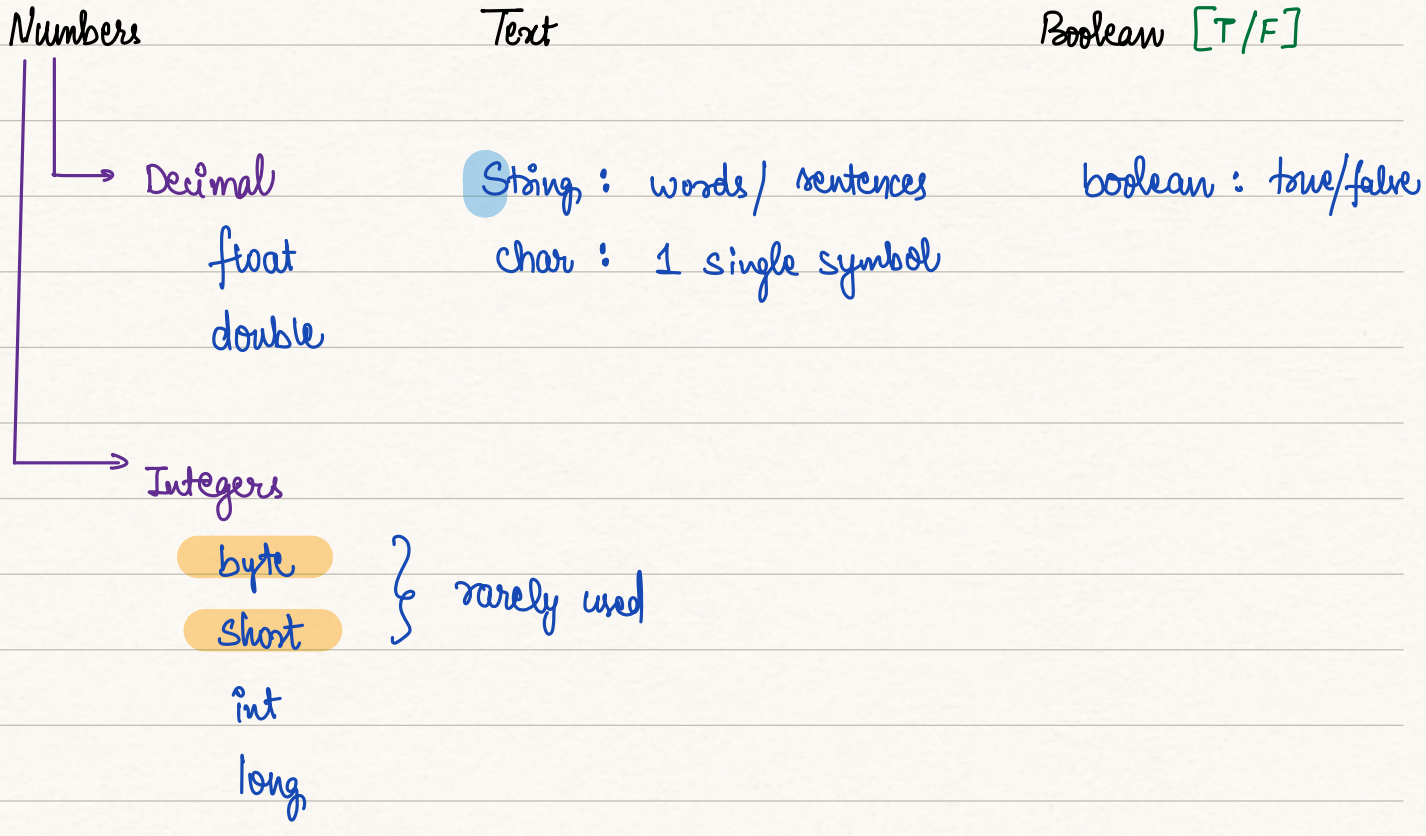
20

↳ 40

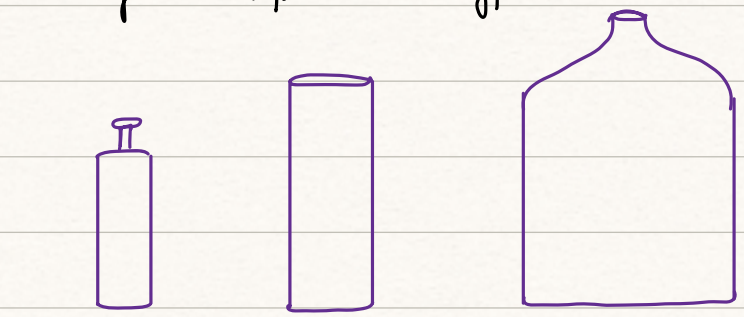
Rules of Naming a variable :

1. Name can only contain lowercase, uppercase alphabets, digits [0-9], $ [Dollar] and _ [underscore], nothing else.
2. Name cannot start with a digit
3. Cannot use reserved keywords as variable name.
   Reserved keywords : words which already have a predefined meaning in JAVA.
   Ex → public, static, void, int, etc.
4. Variable name is also case-sensitive.

Different categories of Data



Why multiple datatype under same category.



500 ml water | 5l water | 20L water

small | medium | large

All of them store water

Difference is in storage capacity

	small	medium	large
500ml	✓ [ideal]	✓	✓
15 litres	X	X	✓✓

Range / Capacity is different

int : -2^{31} to $2^{31}-1$ [-2147483648, 2147483647]

$\approx -2*10^9$ to $2*10^9$ [approx]

long : -2^{63} to $2^{63}-1$

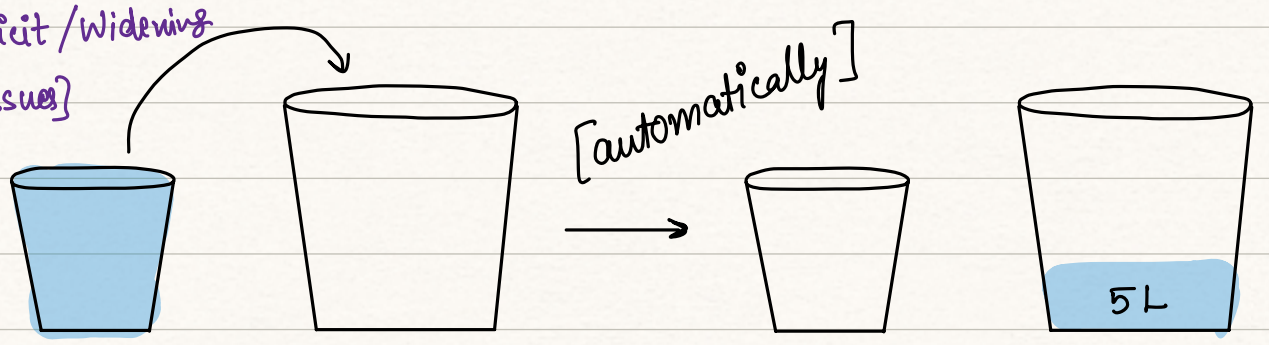
$\approx -9*10^{18}$ to $9*10^{18}$ [approx]

Typecasting →

lower storage → higher storage

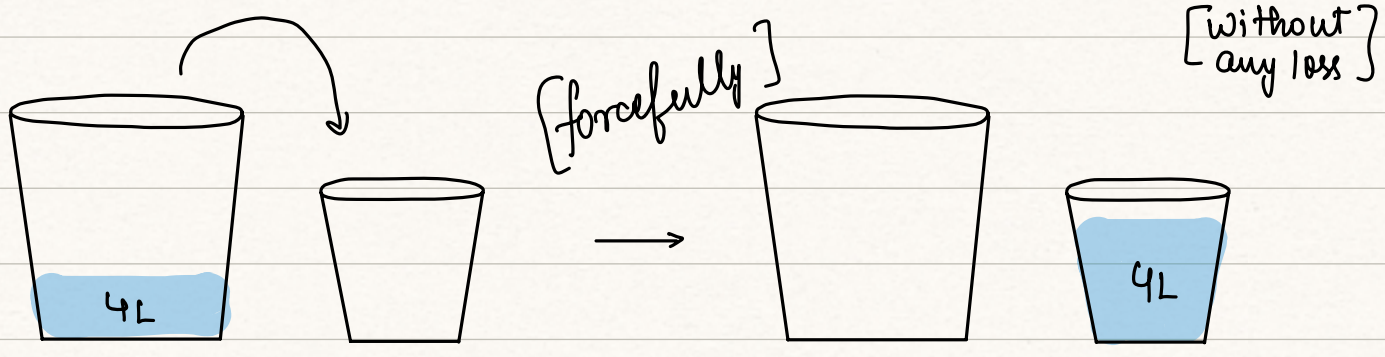
Implicit / Widening

[No issues]

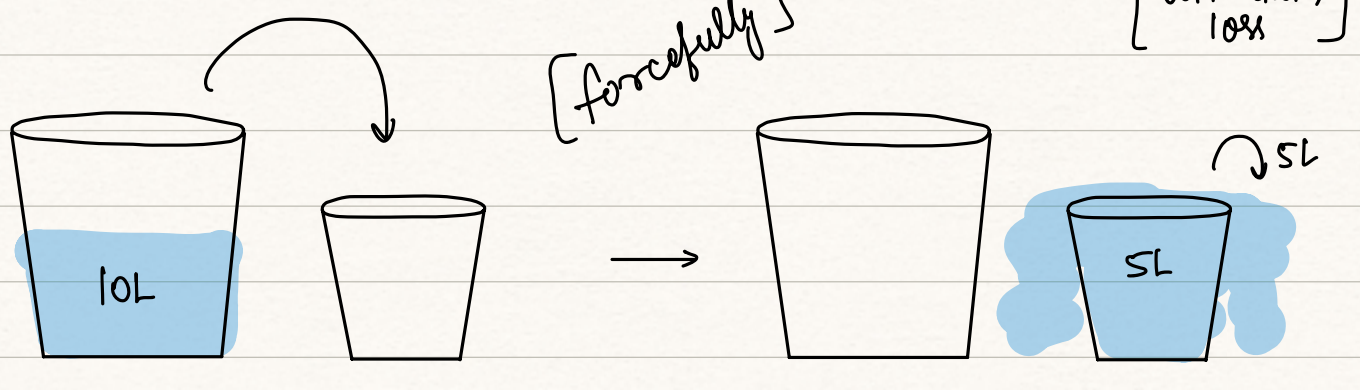


5L water (int) | 20L water (long) | 5L water | 20L water

Explicit / Narrowing



20L water (long) | 5L water (int) | 20L water | 5L water

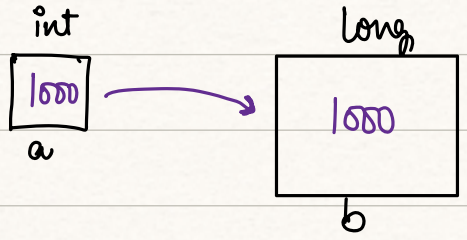


20L water (long) | 5L water (int) | 20L water | 5L water

Quiz 23.

```
int a = 1000;
long b = a;      // Implicit
System.out.print(b);
```

int → long



↳ 1000

(int)

Quiz 24.

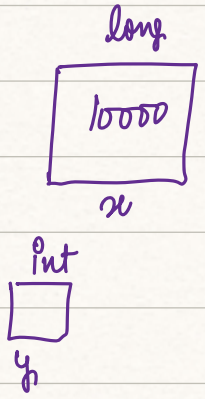
```
long x = 1000;      // Implicit type casting
System.out.print(x);
```

↳ 1000

Quiz 25.

```
long x = 10000;
int y = x;
System.out.print(y);
```

Implicit



Error : possible lossy conversion from long to int