Type Conversion in java

Data Types

- Integers (Byte, short, int, long)
- Real → Float, double
- Characters → char
- Booleans → boolean

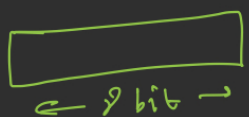
Type Conversion in java

- Implicit
- Explicit

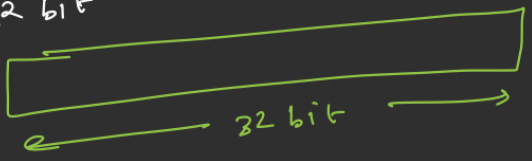
```
byte b = 24;
int i;

i = b;
System.out.println(i); //24.
```

* Rule for implicit Conversion
  - Destination data type should be wider then source data type.

byte → −128 to +127
- 8 bit



int →
- 32 bit



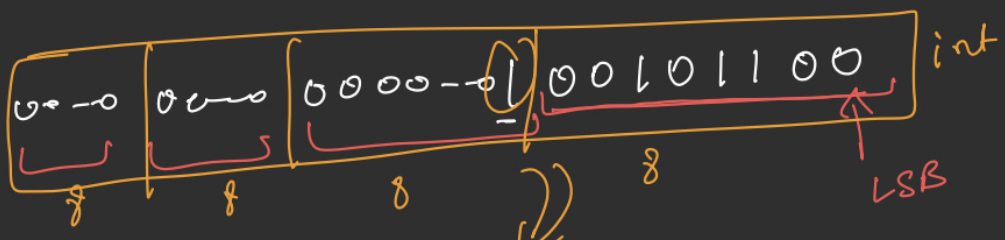
Widening Conversion

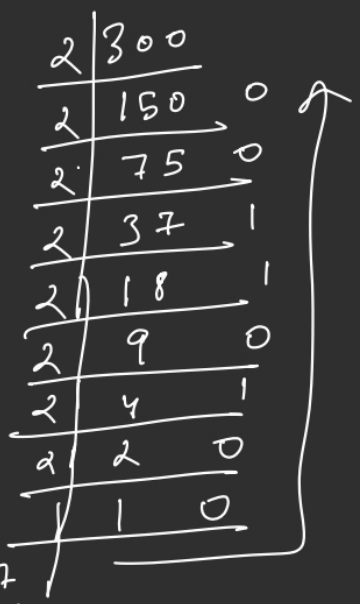
short → int
int → long

② Explicit Conversion

↳ Casting.

```
int i = 300;
byte b;
b = i;          ✗
b = (byte) i;   ✓
System.out.println(b); // 44
```





00101100 byte

8 bit

b = 44 ✓

-128 to +127

2⁸ = 256

b = 300 % (Range of byte)

300 % 256

b = 44 ✓

long → int

double → Float

Narrowing Conversion

⇒ char c = 'a';

int i = c;

char = 16 bit

int = 32 bit

System.out.println(i); // 97

Truncating Conversion

Float → int

double → int

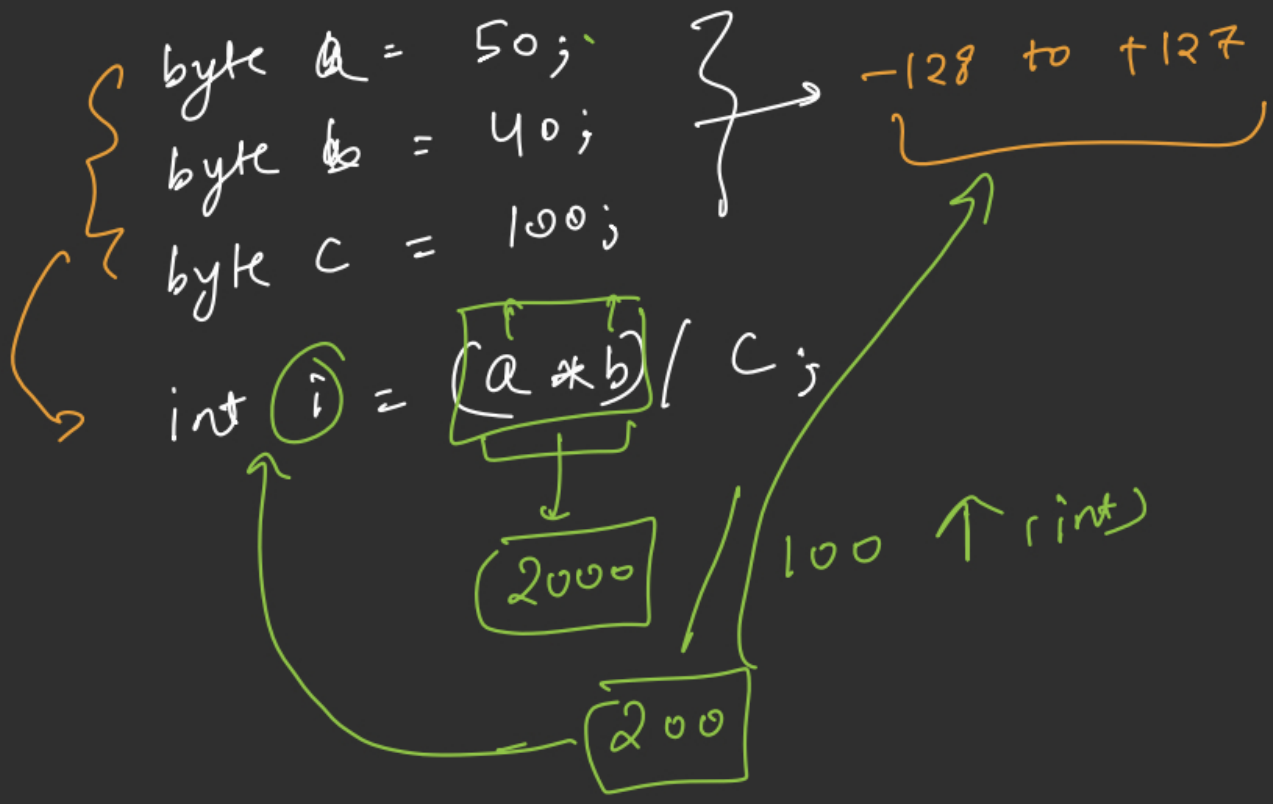
float b = 16.25 b;

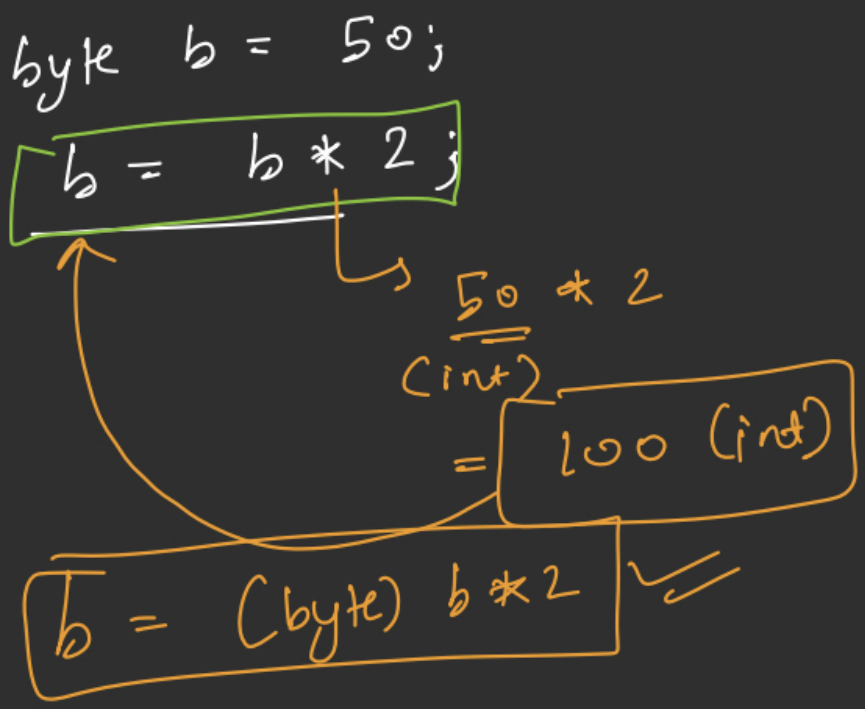
int i;

i = f; ✗

i = (int) f; // i = 16

Automatic Type promotion





Type promotion Rules

1. byte, short and char values are promoted to int.
2. If one operand is long, the whole expression will become long.
3. If one operand is float, entire expression will become float.
4. If one operand is double, entire exp is double.