Today's agenda
↳ Quizzes & learning

Quiz 1: → int x = 10;

Syntax to declare the variable?

a) type   variable_name = value ; ✓

b) variable_name   type   = value ;

c)   variable_name   = value ;

d)   None of the above.

Quiz 2:

Declare an int variable with name y and value 20?

a) Int y = 20; xx

    ↳ int y = 20;   ↦ (c)

Quiz 3:

int a = 10;

int b = 20;

System.out.println (a+b); → 30

| 10 | | 20 |
| a | | b |

Quiz 4:

```
int a = 20;
int b = 30;
System.out.println(a + " " + b);
        ↳  20  30
```

→ removed from readerboard

Quiz 5:

```
                    ↗ t
int   temp = 10;
System.out.println(Temp);
              ↳ error
```

Quiz 6:

```
System.out.println(a);
int a = 10;
          ↳ error
```

Quiz 7:

int a = 20; → you Can't initialize
int a = 30; same variable name
System.out.println (a); twice?
          ↳ error

Quiz 8:

int n = 20;

~~40~~ ~~20~~
n

System.out.print (n);

n = 40;

2040

System.out.println (n); ↘

Quiz 9:

int a = 10;

~~50~~ ~~10~~ | 20
a | b

int b = 20;

!0 = 10

         20
↳ a = b + 30;

LHS = RHS

System.out.println (a); → 50

↓

LHS == RHS

↳ Computer → = → assignment operator
↳ assign right side
value to left side.

* variable naming rules

1. Name Can Contain lowercase, uppercase alphabets or digit (0-9) or '$' (Dollar) or '_' (underscore)

2. First letter / character of the name Cannot be number.

3. Can't use reserve keywords as variable name:
   Reserved word: words which are already predefined in java. ex: Public, Static, void, int ete.

Quiz 10:

```
int x = 10;  ✓
int ty = 20;  ✗
int y@b = 30;  ✗
```
⟹ ans = 1

Is how many of above are Correct variable names?

Quiz 11:

```
int _y = 10;  ✓
int any = 20;  ✓
int x a = 30;  ✗
int x$2 = 45;  ✓
```
⟹ ans = 3

How many of above are Correct variable names?

```
int Static = 60;        -> error
System.out.Println (Static);
```
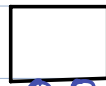
Different Categories of data
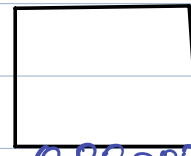
a) Numbers   b) Tent   c) boolean

true   false

Integers → Decimal

↓ byte
↓ short
↓ int
↓ long

boolean flag = false;
type ↑   ↑ name   initialized ↓ value
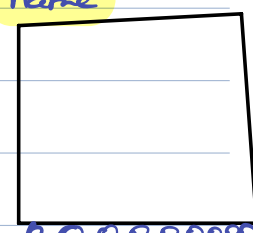
(10 kg)   (25kg)   (50 kg)   (100 kg)

item:

5 kg →   ✓ (ideal)   ✓   ✓   ✓

75 kg →   ✗✗   ✗✗   ✗✗   ✓✓

Range / capacity

Capacity /
range
are
different

byte -2^7 to 2^7-1 : {-128 , 127}

short -2^{15} to $2^{15}-1$; {-32768, 32768}

int → {-2x10^9 to 2x10^9} -2^{31} to $2^{31}-1$: {-214...., 214708.}

long -2^{63} to $2^{63}-1$: {____ , ..-}
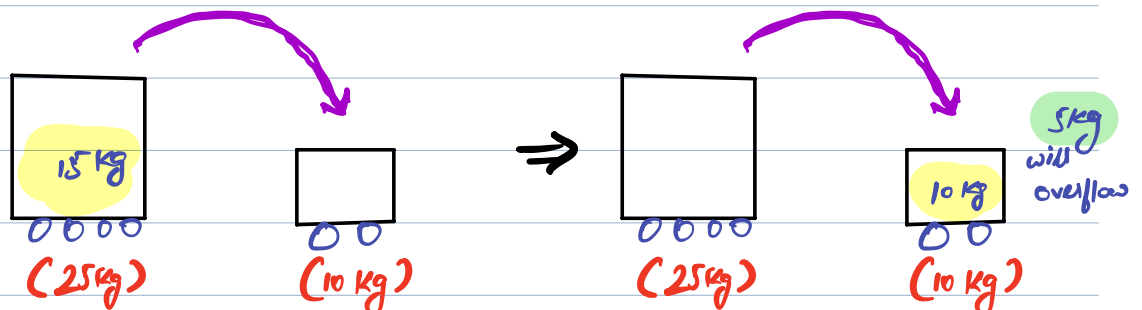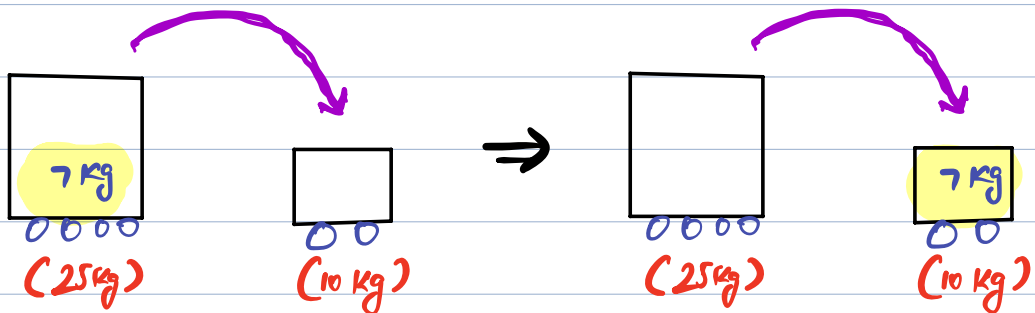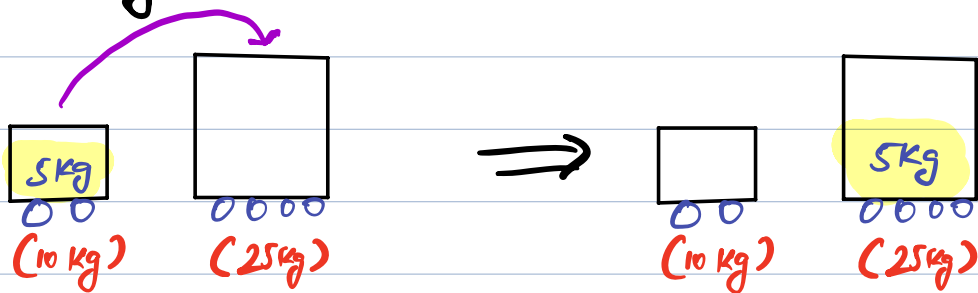
{-2x10^{18} to 2x10^{18}}

⇓

Complete explanation is in Bit manipulation Class.

L, The default value is int. To initialize long you need   long a = 10000000000L.

Break till 9:29 pm
L, you didn't come this far only to come this far.

→ Type Casting

5 kg
(10 kg)   (25 kg)   ⟹   (10 kg)   5 kg   (25 kg)

7 kg
(25 kg)   (10 kg)   ⟹   (25 kg)   7 kg   (10 kg)

15 kg
(25 kg)   (10 kg)   ⟹   (25 kg)   10 kg   (10 kg)   5 kg will overflow

int $\longrightarrow$ $\{-2^{31}$ to $2^{31}-1\}$ $\longrightarrow$ $\{-2*10^9$ to $2*10^9\}$

long $\longrightarrow$ $\{-2^{63}$ to $2^{63}-1\}$ $\longrightarrow$ $\{-2*10^{18}$ to $2*10^{18}\}$

ex1: int x = 100

long y = x; $\longrightarrow$ implicit

System.out.println (y);

ex2: long x = 1000;

explicitly $\longleftarrow$ int y = (int)x;

System.out.println (y); $\longrightarrow$ 1000

1000
x

1000
y

Quiz 13

```
int a = 10000;
long b = a;
System.out.Println (b);
```

└ 10000

Quiz 14:

```
long a = 100000;          int y = (int) a
int y = a;                → TypeCast ?
System.out. Pointln (y);
```

Quiz 15:

```
long a = 10^10 L;
int b = (int) a;
System.out.pointln (b);
```

random value

10^{10} a

b ? int

✳ reading Inputs

⌐→ Scanner `scn` = new Scanner (System.in); *→name*

int x = scn. nextInt ();

System.out.println (x);

Quiz 16:

```
input : 30
scanner scn = new scanner (system.in);
int a = scn. next Int ();
System.out.println (a);
```

↳ error
(small s in System)

Quiz 17:

```
input : 30
Scanner scn = new Scanner (system.in);
int a = Scn. next Int ();
System.out.println (a);
```

↑
small s

↳ error

Quiz 18:

```
input : 30
Scanner scn = new Scanner (System.in);
int a = Scn. next Int ();
System.out.println (a);
```

↳ 30

Quiz 19:

input: `24   30`

```
Scanner scn = new Scanner (System.in);
int x = scn. next Int ();  ←24
int y = scn. next Int ();  ← 30
System.out. println (x);   → 24
```

Quiz 20:

input: `24   30`

```
Scanner scn = new Scanner (System.in);
int x = scn. next Int ();
int y = scn. next Int ();
int z = scn. next Int ();
System.out. println (x + y + z);
```

ↄ error

ↄ Done with today's class

```
float x = 3.4f;
double y = x;
System.out.point (y);
```

```
int x = 40;
double y = x;
System.out.Point (y);
```

```
double x = 3.45;        → error
int y = x;
System.out.point (y);
```