


Unary \rightarrow pre/post inc/dec

$++$
 \downarrow
 $+1$

$--$
 \downarrow
 -1

pre Increment

M/m
 $a \rightarrow$ 

(I) \checkmark `int a = 10;` (1)
`Syso (++ a) ;` // //
 \downarrow \downarrow
(2) $+1$ add

i i $i++$
 $++i$

$a = 10$

$a = 100;$

\downarrow
(a) \rightarrow 100

(II) \checkmark `++a;` `// ++ // \rightarrow 12`
`a++;` `// 13`

(III) `int b = ++a;`

Diagram illustrating the execution of `int b = ++a;`:

- An arrow points from `++a` to `b`, labeled "Assignment".
- An arrow points to `++a`, labeled "unary".
- A circled "1" is next to the "unary" label.

(2)

`b = 14`

`a → 8` `7` `a →`

13

¹⁴

eg. `int a = 5;`

`++a;` // 6

`int b = a + ++a + a;`
`6 + 7 + 7`

`syso(a);` 7 ✓
`(b);` 20 ✓

post inc → value ++;

int b = 5;

b → 5 6 7 8

x = 2, 3, 4

(1) Sys (^①b++); // 5

y: int x = 2; y = x + 3

int y = 1;

(2) b++; // 6++ → 7
Sys (b); // 7

int z = x++ + ++x + y++

① + + y ② x ③ y;
3 4 3

(3) int c = b++;
Sys (c); // 7
(b); // 8

Sys - x - 4 ✓
- y - 3
- z - 17

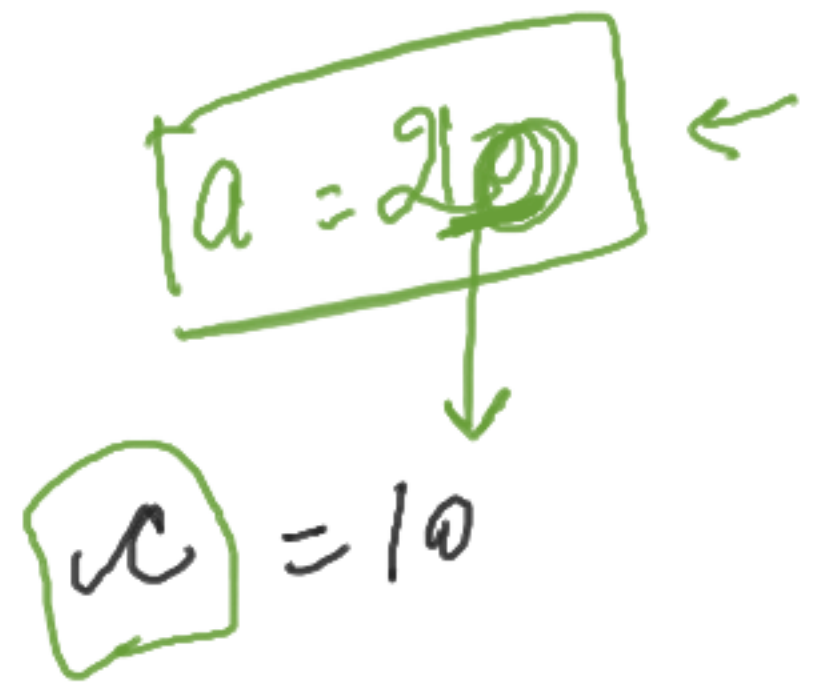
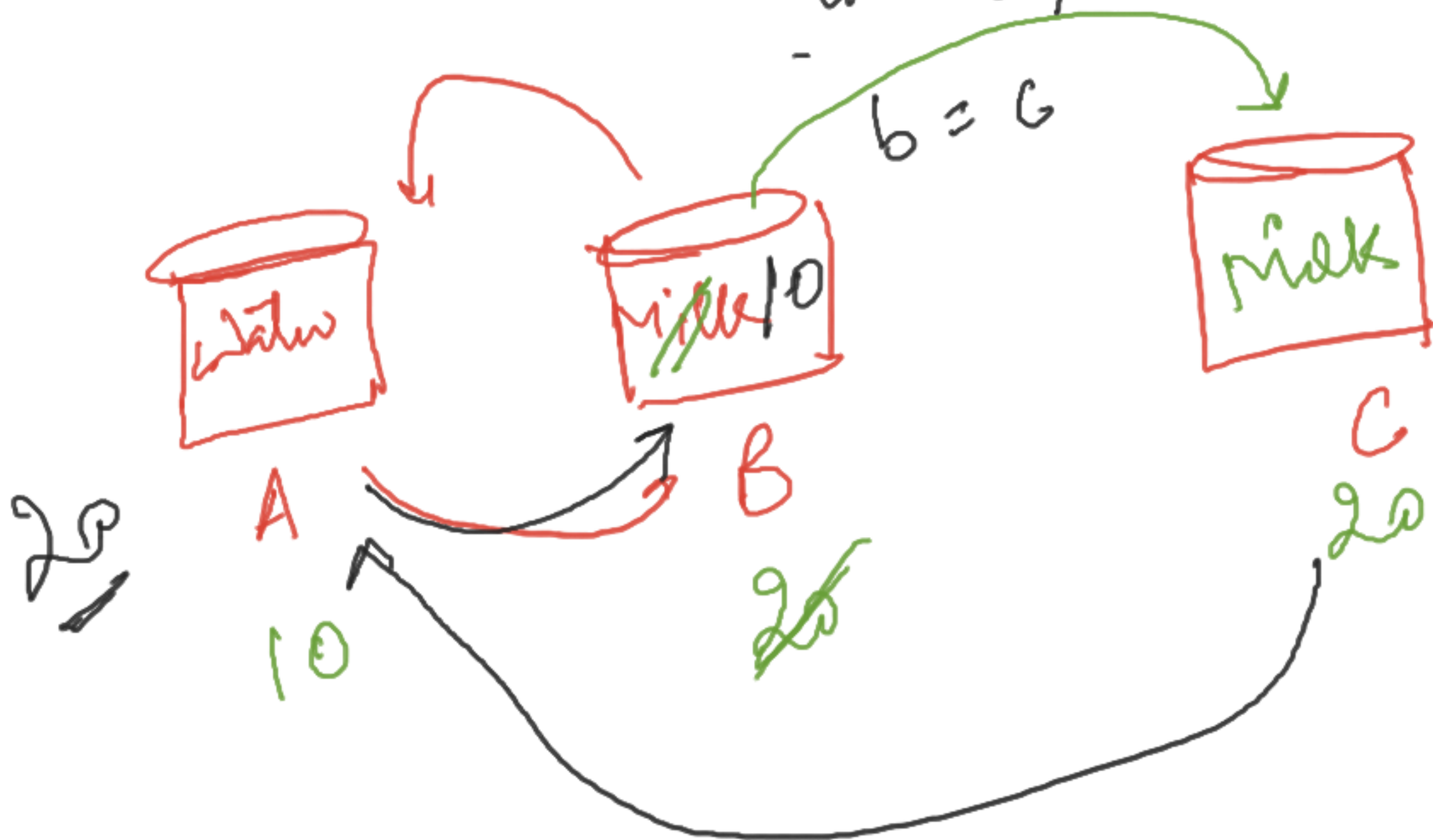
Swapping

int a = 10; int b = 20;

int c = a; // c = 10

a = b; // a = 20

b = c



b = 10

Without using third variables:

int a = 4;

int b = 5

$\left\{ \begin{array}{l} a = b \\ b = 4 \end{array} \right.$

a = 9
b = 5

~~5~~
~~9~~
a = 4

a = a + b ; // 9

b = a - b ; // 9 - 5 = 4 ✓

a = a - b ; // 9 - 4 = 5

b = ~~5~~ 4

Sum of digits of a Number \rightarrow (II)

$$346 \% 10 \rightarrow \underline{6}$$

$$n = \overset{1}{\underset{\downarrow}{3}}\overset{2}{\underset{\downarrow}{4}}\overset{3}{\underset{\downarrow}{6}}$$

$$= 3 + 4 + 6 = \textcircled{13}$$

✓ Mod:
(I) $n \% 10 = \textcircled{6}$
int d1 =

$$\underline{34}$$

$$(d1 + d2 + d3)$$

✓
(II) $n = n / 10 \rightarrow 34$

int d2 =
(III) $n \% 10 \rightarrow 34 \% 10 \rightarrow \textcircled{4}$ \nearrow Rem

int d3 = $n / 10; // \textcircled{3}$

$$\begin{array}{r} 10 \overline{) 34} \\ \underline{30} \\ 4 \end{array}$$

$\textcircled{13}$ $\textcircled{34}$
 $\sqrt{346} / 10$
 $\underline{30}$
46
 $\underline{40}$
6
✓

Reverse of a Number \rightarrow $\begin{array}{r} 153 \\ \hline 351 \end{array}$ \rightarrow without loop.

Sum of cube of digits $\rightarrow x = 141$

$$1^3 + 4^3 + 1^3$$

Decision making stmts :

→ if

→ if-else

→ ladder else if

→ Nested if else

→ Switch case

(I) if Statement :- ~~Keywords~~ if (exp.) {
// Stmtns
}

int if = 10;
if X

{
false
if (true) {
// sys ('i'); X
}

`Scanner scn = new Scanner(System.in);`

Annotations for the code above:

- `Scanner`: Built-in Class
- `scn`: variable
- `=`: Keyword
- `new`: Keyword
- `Scanner`: Class Name
- `(System.in)`: property/variable
- `Scanner` (in parentheses): Class Name

Creating an object of Scanner class.

By using 'new' keyword

Class A {

} A obj = new A ();

Can create an object of class

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