

Type casting

$\text{item1} + \text{item2} \rightarrow \text{string}$
 $\text{long } a = 10000, \text{ int } b = 2; \quad | \quad a + b \Rightarrow$
 Implicit type conversion



Type casting :-

$\text{desiredDataType} = (\text{datatype}) (\text{originalDataType})$

$\text{double } b = 7.123$

$\text{int } a = (\text{int})(b);$

$\text{int } c = 20;$

$a = (\text{int})(b + c) \rightarrow \text{datatype} / - ???$
 $\rightarrow 27.123$

$a = (\text{int})(b + c);$
 $a[27]$

14.00

$\text{long} \rightarrow \text{int}$

$\text{double} \rightarrow \text{long}$

$\text{char} \rightarrow \text{int}$

\vdots
PNC you have to

$\text{double } a = 5; \text{ // explicit.}$

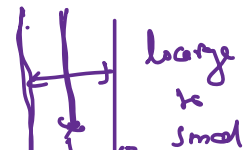
$a = 5.0 ?$

$\text{int } b = (\text{int}) 5.7; \text{ // error}$
 $b = 5$

$\text{int } b = (\text{int})(10001)$

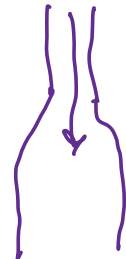
$\text{int } c = (\text{int})(3.001).$

Explicit
 (narrowing)



Implicit
 (widening)

Small



while loop

⇒

1) initializing variable

2) condition

3) loop work

4) update (Inc / Dec)

Fail

out of loop.

D → 1 → 2 → 3 → 4 → 2 until condition

// 1 → Initialization fails

while (// 2) → condition

// 3 → loop work

// 4 → update.

C → 1

→ 1, 2, 3, 4, 5, 6 →

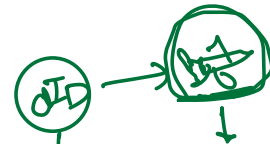
int count = 1; // →

while (count <= 6) {

// Ball

count++;

inc / dec
1 → 6
inc



basic analogy

For loop

Syntax

only once

for (initialize ; loop condition ; update) {

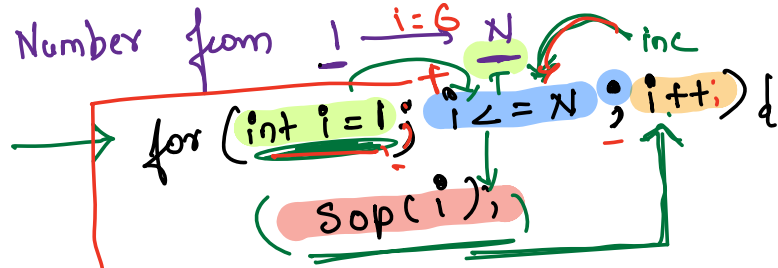
// loop work. (3)

outside of the loop

only once

2
3
4
↓
will repeat

Print Number from 1 to N

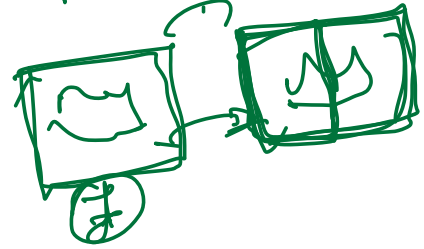


$i = 1$
 $N = 5$

i	$i \leq N$	O/p	$i++$
1	T	1	2
2	T	2	3
3	T	3	4
4	T	4	5
5	T	5	6

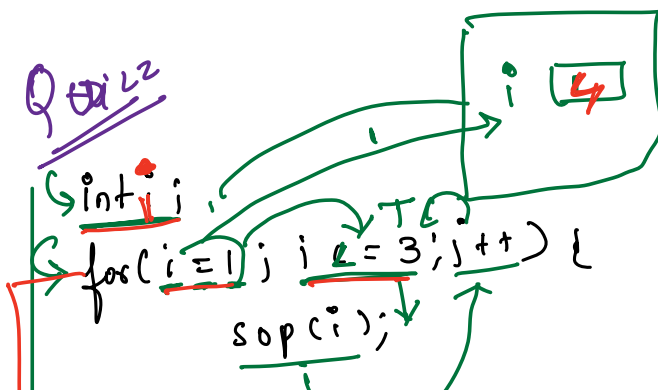
6 F → time out of loop

Puzzle sol



Q → Using for loop → print odd Numbers from 1 to N.

Quiz 2



i	$i \leq 3$	O/p	$i++$
1	T	1	2

\downarrow
 \rightarrow sop c i; ✓ 4. imp

2 T 2 3
 3 T 3 (4)
 (4) F \rightarrow come out

int i;
 for (i=1; i<=3; i++)
 {
 i=1 ✓
 if (i==1) ✓
 {
 sop c i; ✓
 }
 }

int i=1;
 while (i<=3) {
 sop c i; ✓
 i++; ✓
 }
 sop c i; ✓

error
 int i;
 for (int i=1; i<=3; i++) {

int a;

int a = 10; ✓
 ✓

(int) a;
 (int) a = 10;

int a = 1;

Quiz

```
for (int i = 1; i <= 3; i++)  
{  
    sop(i);  
}
```

→ sop(i); X i X → compilation error

Q → Given a number N → print last digit of N

N → 1563 → 3

sop(N % 10);

1563 — 3

↓
1560 + 3
10 R

→ print first digit and last digit. // for loop

N = 6175 → 6
5.

6175
first digit

6175 → 617 ?
n/10
617 → 61
n/10
61 n/10 → 6

```

int N = sc.nextInt();
int ld = N % 10;
int fd = 0;
for (int i = N; i > 0; i = i / 10) {
    fd = i % 10; // yes
    sop(fd);
    sop(ld);
}

```

fd = ~~0~~ ~~0~~ ~~0~~ 6
 ① ~~0~~ ~~0~~ ~~0~~

N = 6175
ld = 5; -
fd = 6; f

i	i > 0	fd	i = i / 10
6175	T	5	617
617	T	7	61
61	T	1	6
6	T	6	0
0	F		

overwritten (pointing to fd column)

o/p → 6.
 5.

$i \% 10 \rightarrow$ last digit
 \approx^x

Doubt

```

long int bal = sc.nextInt(); // 1000
int T = sc.nextInt();
while (T > 0) {
    int type = sc.nextInt();
    long ← int amt = sc.nextInt();
    if (type == 1) {
        bal = bal + amt;
    } else {
        if (amt <= bal) {
            bal = bal - amt;
        } else {
            sop("Insufficient bal");
        }
    }
}

```

→ (N = 1000)
 → (T = 3) ✓
 → ① 500 -
 → ② 1400 ←
 → ③ 500 ←
 1 → credit add.
 2 → debit sub

withdraw → $bal \leq amt \rightarrow$

```

int N = sc.nextInt();
int Id = N % 10;
int fd;
for (int i = N; i > 0; i / 10) {
    int fd = i % 10;
    sop(fd); // → error
}

```

