Lecture 3

Operators in C, Precedence, ASCII

ASCII (American standard code for information exchange)

A - Z - 65 - 90

a - Z - 97 - 122

0 - 9 - 48 - 57

space - 32

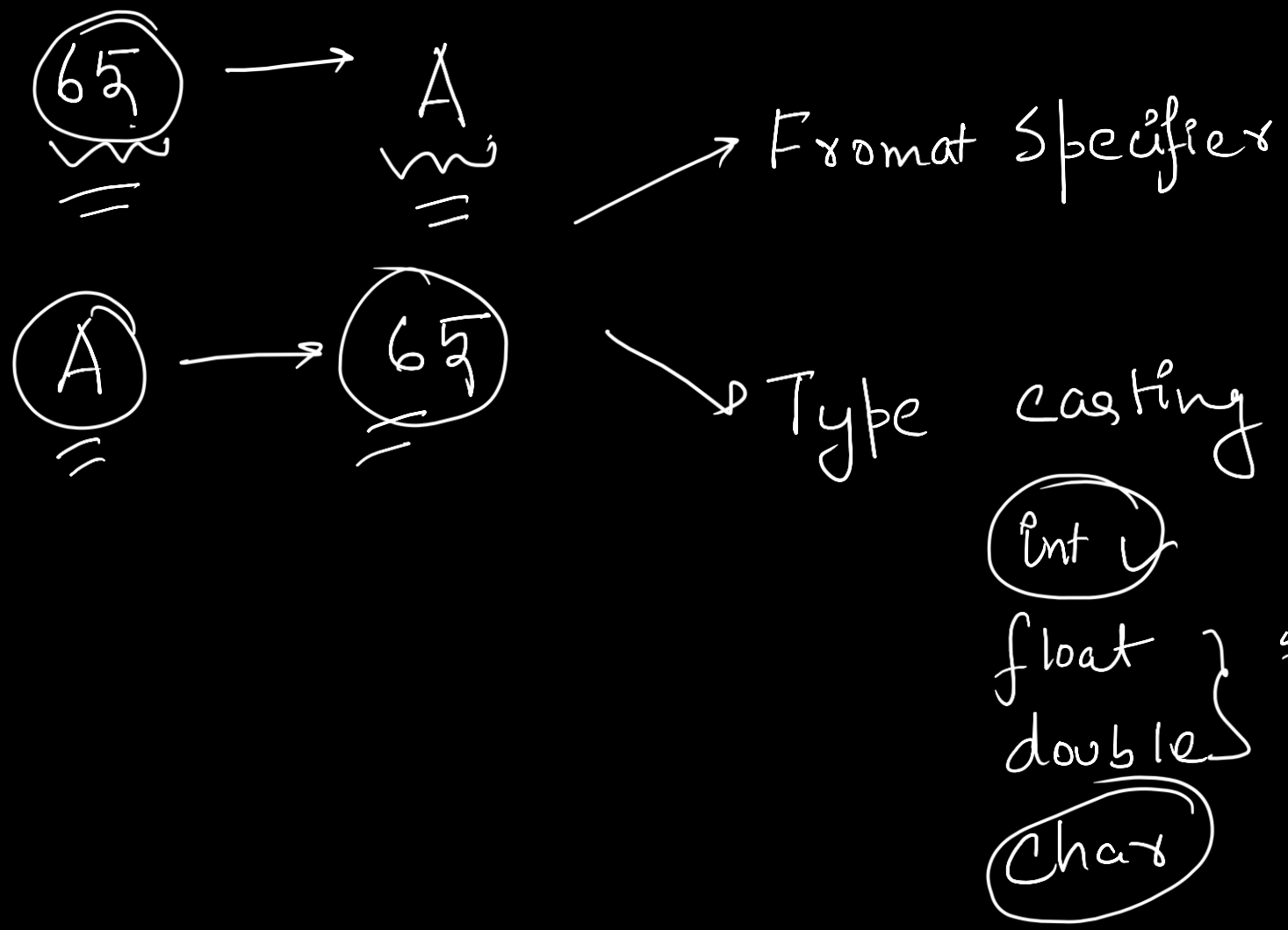
2	17	R
2	8	1
2	4	0
2	2	0
	1	0

$(17)_{10} = (10001)_2$

65	R

8 R

Generating Ascii from characters



Operators in C

- Arithmetic Operator
- Logical Operator
- Relational Operator
- Bitwise Operators
- Assignments Operators.

Arithmetic Operators.

int
float ↓

+	a + b
-	+ Unary Plus
/	
*	(+a) + 3
{%}	- Unary Minus
	(-a) -3

8/2 = 4

8%2 = 0

```
    4
  ----
2 | 8
    8
  ----
    0
```

float int

5.0 / 2

(5)/(2) = (2)

5%2 = 1

```
   2.5
  -----
2 | 5
    4
  ----
    10
```

(float) 5 / 2

Relational Operators

$<$

$>$

$<=$

$>=$

$==$

$!=$

$a = 3$ $\quad b = 6$ $\quad (a+b) = 9$

$3 < 6 = 1$ boolean

$(a < b)$

$(3 > 6) = 0$ Yes/no true/false

$(a <= b) = 1$ 1/0

$(a >= b)$ 0

$a == b = 0$

$3 != 6 = 1$

$a != b$

① Increment ++

Postfix → Phele likheye fir chaye kareye
Decrement --

① 2

int a = 3;

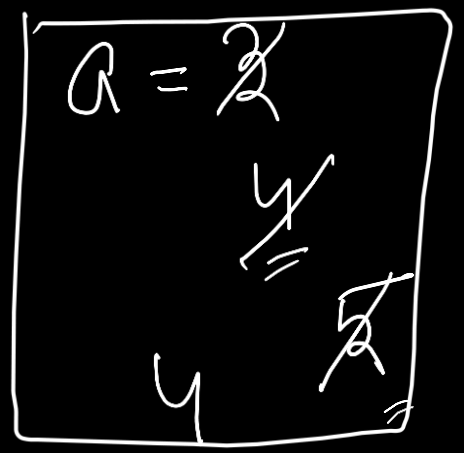
int k = (a++) + (++a)
= 3 + 5
= 8

a = 3 → 4 → 5

a++ ← Postfix

++a

Prefix



int k = a++ + a++ + a--
= 3 + 4 + 5
= 12

int p = 6;

int k = (p++) + (--p) + (p++) + (++p)

= 6 + 6 + 6 + 8

= 18 + 8

= 26

24

p

6

7

8

Logical Operators

a = 6 b = 3 c = 2

&& → Dono cond" (a > b && a > c)

|| → koi bhi ek

! → 6 > 3 → 1 6 > 2 → 1

!(a > b) → !(6 > 3) → !(1) → 0

1

Assignment Operators

=

&

```
int a = 6
a = a + 3;
```

(a += 3) <=> a = a + 3)

(a -= 3) <=> a = a - 3)

(a /= 3) <=> a = a / 3

⋮

Operator Precedence & Associativity

a ++ a --

++ ++ ++ a L-R - a

-- -- R-L

/ * % L-R

+ - R-L

BODMAS

a = 3 ;

a + b * c - k

(3++) + 4 * 5 - 2

(3 + 4 * 5 - 2)

3 + 20 - 2

23 - 2

21

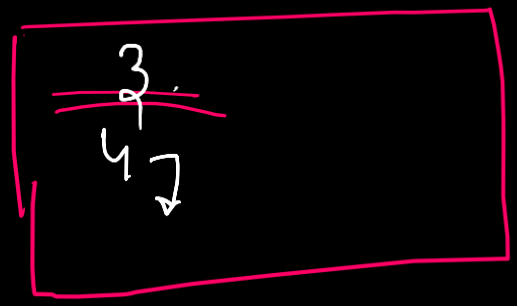
(a++) + b * c - k

↓

(Scanf)

printf("...", a)

Terminal.



(→ → → → →)

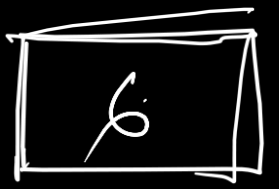
```
int a;
int b;
```

a → 2

b → 4

```
scanf("%d", &a);
Scanf("%d", &b);
int c = a+b;
printf("%d", c);
```

printf(a)



(&a) (&b) &b