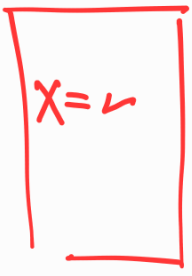
⇒ I/P & o/P Values

→ scanf
→ printf

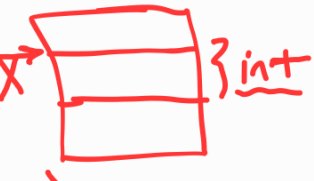
printf

printf ("format_specifier" , Var) ;

ex
- printf (" %i " , X) ;
  - %i → signed int
- printf (" X = %i " , X) ;

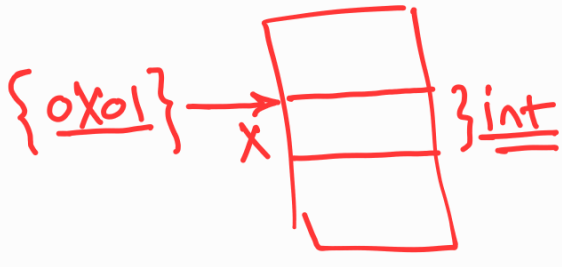


- int X ;
- scanf ("%d" , &X) ;

scanf → 

scanf ("format_specifier" , &Var) ;

&Var → Address operator



specifier → int , float , - - - -

hint

↳ SCanf & Printf ⇒ Not used in ES

⇒ driver → LCD

↓ function

LCD_write "—"

Examples → test.c

Y = 0 (signed char)

[-128 : 127]

-1

X = 0 (unsigned char)

[0 : 255]

255

0 - 1 = 01 ⇒ 1 (2's)

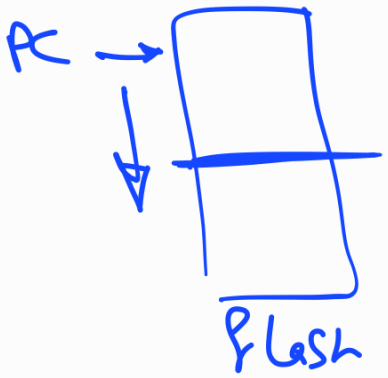
0000 0001 (2's)

1111 1111

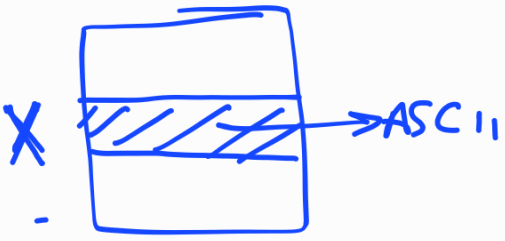
255

hint

→ scanf



ASCII Code



char → 'A', 'B', 'C' ---- .

↳ 8 bit ⟹ $2^8 = 256$

⇒ operators

- Arthimatic
- Bitwise
- assignment
- Relational
- Logical
- others
  - ternary
  - []
  - *
  - &
  - size-of

① Arthim

- Binary
  - *, /, +, -, %
    - 5 % 3 = 2
    - 5 / 3 = 1 ← R = 2
- Unary
  - N % K = [0 : K-1]
  - N % 3 = 0 or 1 or 2

ex)

$0 \% 3 = 0$
$1 \% 3 = 1$
$2 \% 3 = 2$

$3 \% 3 = 0$
$4 \% 3 = 1$
$5 \% 3 = 2$

$6 \% 3 = 0$
$7 \% 3 = 1$
$8 \% 3 = 2$

$N \% K = N \quad (N < K)$

Note

Rule

$$dec\left(\frac{A}{B}\right) * B + (A \% B) = A$$

$5 \% 3$
A B

$1 * 3 + X = 5$

$X = 2 \Rightarrow A \% B = 2$

$5 \% 3 = 2$

⊛ Special Cases:-

$A \% B = 0$

$+5 \% -3 = +2$
$-5 \% 3 = -2$
$-5 \% -3 = -2$

② unary operators (++ & --)

++ ⇓ INC

-- ⇓ dec -

```
int x = 20;
x++;   // x = x + 1;    → ++x;
printf("%d", x);   ⟹ (21)
```

* → Postfix: x-- , x++
  → Prefix: --x , ++x

---

ex

```
int x = 20;
- printf("%d", x++);  → 20
                        [21]
- printf("%d", ++x);  → 22
```

---

ex

```
unsigned char x = 6, y = 7, z = 8, w;
w = x++ + y++ + --z;   // w = 20
      6     7     7
printf("w= %i\n", w);
~        ~       ~   x ;
~        ~       ~   y ;
~        ~       ~   z ;
```

w = 20
x = 7
y = 8
z = 7

ex- int X=10 , Y=20 , Z ;

→ • Z= X+++Y → X++ + Y

= 10 + 20 = 30

• Z = X+++++Y ⟹ error — X=11

Sol- ⟹ spaces

→ ⊙ Z= X++ ± +Y ; = 11 + 20 = 31

inc (+ve)