

DAY #16.1

Saturday, June 13, 2026 11:07 AM

For loop

int a = 5;

for (int i = 1; i <= 10; i++)

{ printf("%d", a * i); }

$$5 \times 1 = 5$$

$$5 \times 2 = 10$$

$$5 \times 3 = 15$$

$$5 \times 10 = 50$$

$$5 \times 10 = 50$$

⇒ i = 1 1 <= 10 T 5 × 1 = 5 5
i = 2 2 <= 10 T 5 × 2 = 10 10
i = 3 3 <= 10 T 5 × 3 = 15 15
i = 10 10 <= 10 T 5 × 10 = 50 50
i = 11 11 <= 10 F

A - Z A B C D E F ... Z

char ch = 'A'; ⇒ 65 A [65] ✓

for (int i = 0; i < 26; i++)

{ printf("%c", ch + i); } 65 + 0 = 65 A
65 + 1 = 66 B

⇒ i = 0 0 < 26 T 65 + 0 ⇒ 65 ⇒ A

i = 1 1 < 26 T 65 + 1 ⇒ 66 ⇒ B

i = 25 25 < 26 T 65 + 25 = 90 ⇒ Z

+ i = 26 26 < 26 F

26 < 26
for (int i = 0; i < 26; i++)
{ printf("%c", ch + i); } 65 + 26 = 91

a - z

char ch = 'a'; 97 ch [97]

for (int i = 0; i < 26; i++)

{ printf("%c", ch + i); }

97 + 0 = a

97 + 1 = b

Infinite for loop

* run infinite time until stack overflow (Memory exhaust)

```
for (initialization; condition; incre/decr)
{
    // ...
}
```

1. `for(;; -; -)` $\Rightarrow$ Example of Infinite loop?

`printf("Hello");`

2. short int chas

```
for (chas a = 0; a < 500; a++)
{
    printf("%i.d", a);
}
```

$a = 0 \quad 0 < 500 \quad T \quad 0$
 $a = 1 \quad 1 < 500 \quad T \quad 1$
 !

$a = 126 \quad 126 < 500 \quad T \quad 126$
 $a = 127 \quad 127 < 500 \quad T \quad 127$

$a = 128 = -128 < 500 \quad T \quad -128$
 $a = -127 \quad -127 < 500 \quad T \quad -127$
 -126
 $\vdots$
 0
 $127 \Rightarrow -128$

128
127
255

$\times 72 \quad a = 4;$

$-5 \quad -4 \quad -3 \quad -2 \quad -1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5$

$a++ \Rightarrow 5 \checkmark$
 $a++ \Rightarrow 6 \Rightarrow -5$
 $a++ = -5 + 1 = -4$
 $a++ = -4 + 1 = -3$
 $a++ = -3 + 1 = -2$
 $a++ = -2 + 1 = -1$
 $a++ = -1 + 1 = 0$
 $a++ = 0 + 1 = 1$
 $a++ = 1 + 1 = 2$
 $a++ = 2 + 1 = 3$
 $a++ = 3 + 1 = 4$
 $a++ = 4 + 1 = 5$
 $a++ = 5 + 1 = 6 \Rightarrow -5$