



Module 03



For Loop

3 types of loop:

- ① For loop
- ② While loop
- ③ Do While loop



sum from 1 to n -

Problem: Write a C program that prompts the user to enter a positive integer 'n', and then uses a for loop to calculate and print the sum of all numbers from 1 to 'n'.

loop with conditions -

Write a C program that takes an integer as input and prints all numbers from 1 to that integer, along with whether each number is even or odd.

For loop's syntax:

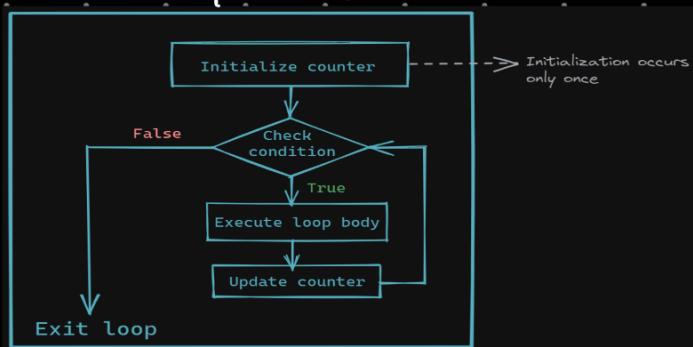
```
for(initialization; condition; increment/decrement)
    //block of code
}
```

Some short forms ↴

$x = x + n \rightarrow x += n$
$x = x - n \rightarrow x -= n$
$x = x * n \rightarrow x *= n$

initialization → starts counting
condition → sets a limit
increment/decrement → ↑ / ↓

How loop works:



Problems regarding for loop:

Problem 1: Write a C program that uses a for loop to print the phrase "I'm sorry" exactly 10 times.

Problem 2: Create a C program that utilizes a for loop to print all even numbers from 1 to 20.

Break Statement

Syntax:

```
for(init; condition; update)
    //code
    if(condition to break)
        break;
    //code
}
```

Problem

"Write a C program using a for loop to print numbers from 1 to 15 but stop the loop when the number 5 is encountered."

Continue Statement

Syntax:

```
for(init; condition; update){  
    //code  
    if(condition to skip){  
        continue;  
    }  
    //code  
}
```



How to stop infinity loop?
→ Click on terminal and press **ctrl+C**.

MY CODE WORKS!
(I HAVE NO IDEA WHY)



#Problem

"Write a C program using a for loop to print numbers from 1 to 15, but when the number 5 is encountered, skip it using the `continue` statement."

While and Do While Loop

Syntax:

While <pre>int i = 0; while(i > 0) { printf("%d", i); i--;</pre>	do-While <pre>int i = 0; do { printf("%d", i); i--; } while(i > 0);</pre>
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Infinity Loop

An infinite loop occurs when loop condition never becomes false.

Effect:

Crashes/freezes the system.