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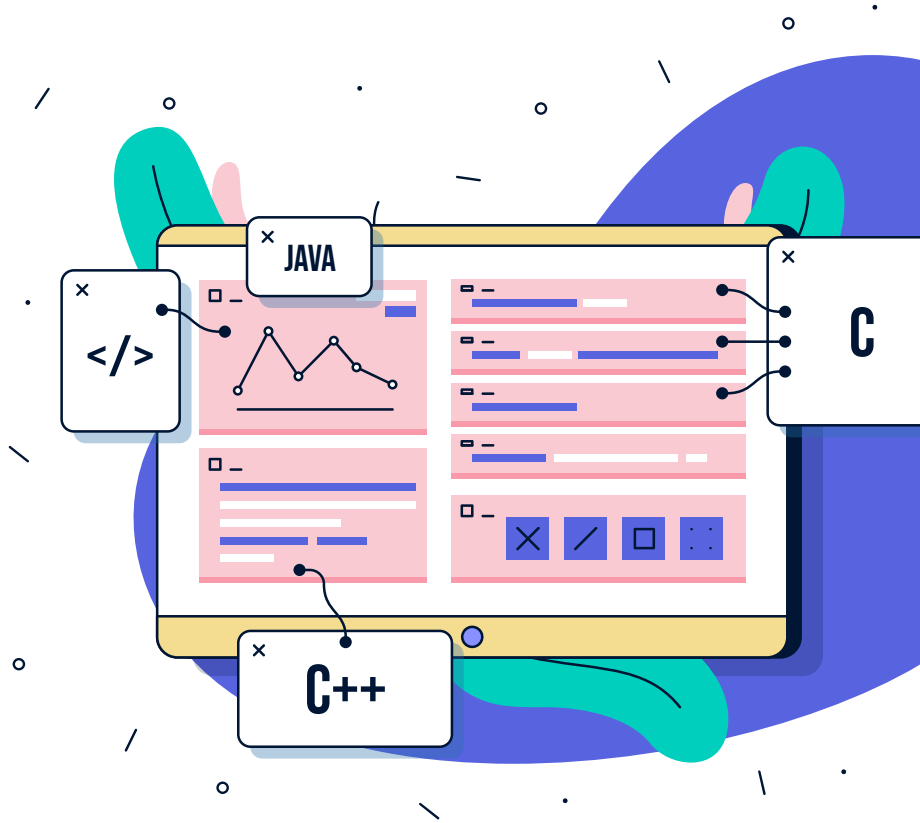
WELCOME,

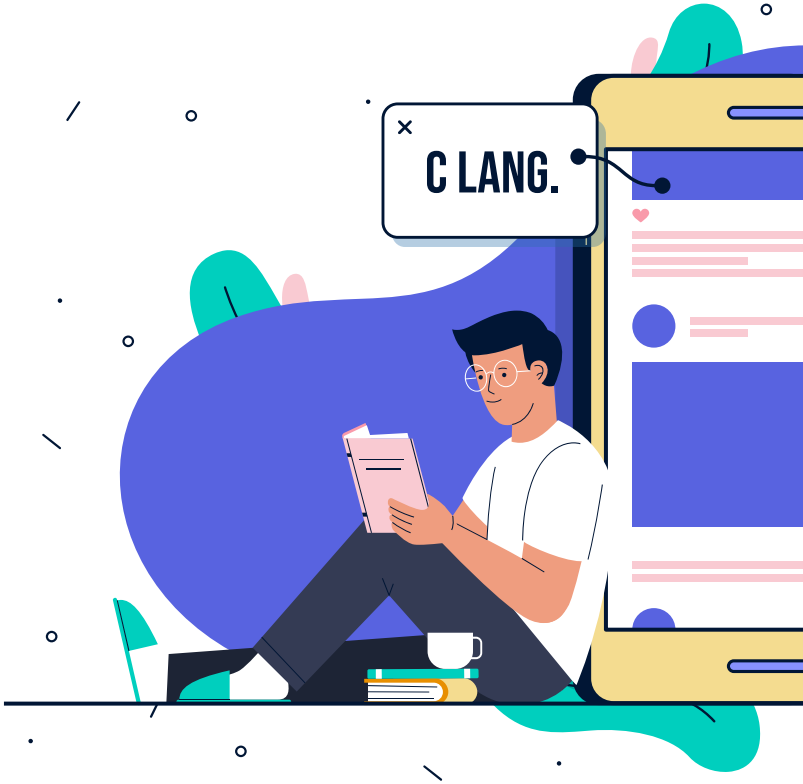
PROGRAMMERS



01.

What is Loops?

WHAT IS LOOPS?



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LOOPS (REPETITION STRUCTURE)

Loops allows the **execution of a block of code repeatedly** as long as a specified **condition is true**.

1. Entry Control Loop
   - while loop
   - for loop

2. Exit Control Loop
   - do while loop

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LOOPS (REPETITION STRUCTURE)

In any type of loops, following three essential parts must have to be included:

Initialization

Condition

Increment
or
Decrement

++ --

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01

INITIALIZATION

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INITIALIZATION

Initialization in a loop refers to **the process of setting an initial value** to the **loop control variable** before the loop starts executing.

The loop control variable is a variable that determines the number of iterations or the condition for the loop to continue.

```
int i = 1;
```

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02

CONDITION

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CONDITION

The condition in a loop is **a boolean expression** that **determines whether the loop should continue or terminate**.

It is **evaluated before each iteration** of the loop.

If the condition is true, the loop body is executed;
if it is false, the loop is terminated, and program control moves to the next statement after the loop.

```
i <= 5
```

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03

INCREMENT

OR

DECREMENT

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INCREMENT / DECREMENT

Increment and decrement in a loop refer to **the operation of increasing or decreasing the loop control variable**.

These operations are typically part of the loop control statement and are **executed after each iteration** of the loop.

They are **used to update the loop control variable** and play a crucial role in determining when the loop should terminate.

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INCREMENT / DECREMENT

Increment and decrement can be done using three different approaches:

```
i = i + 1;
   or
i = i - 1;
```

Normal way

```
i += 1;
   or
i -= 1;
```

Shorthand syntax (using assignment operators)

```
i++;
 or
i--;
```

Using unary operator

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Let’s see **while loop** in detail...

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SYNTAX OF WHILE LOOP

The while loop is a **control flow statement** that **allows a block of code to be executed repeatedly as long as a specified condition is true**.

The basic **syntax** of the while loop is as follows:

```
Initialization
while (Condition)
{
    // Code to be executed if the condition is true
    // Increment / Decrement
}
```

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LANGUAGE

Let’s start now...

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