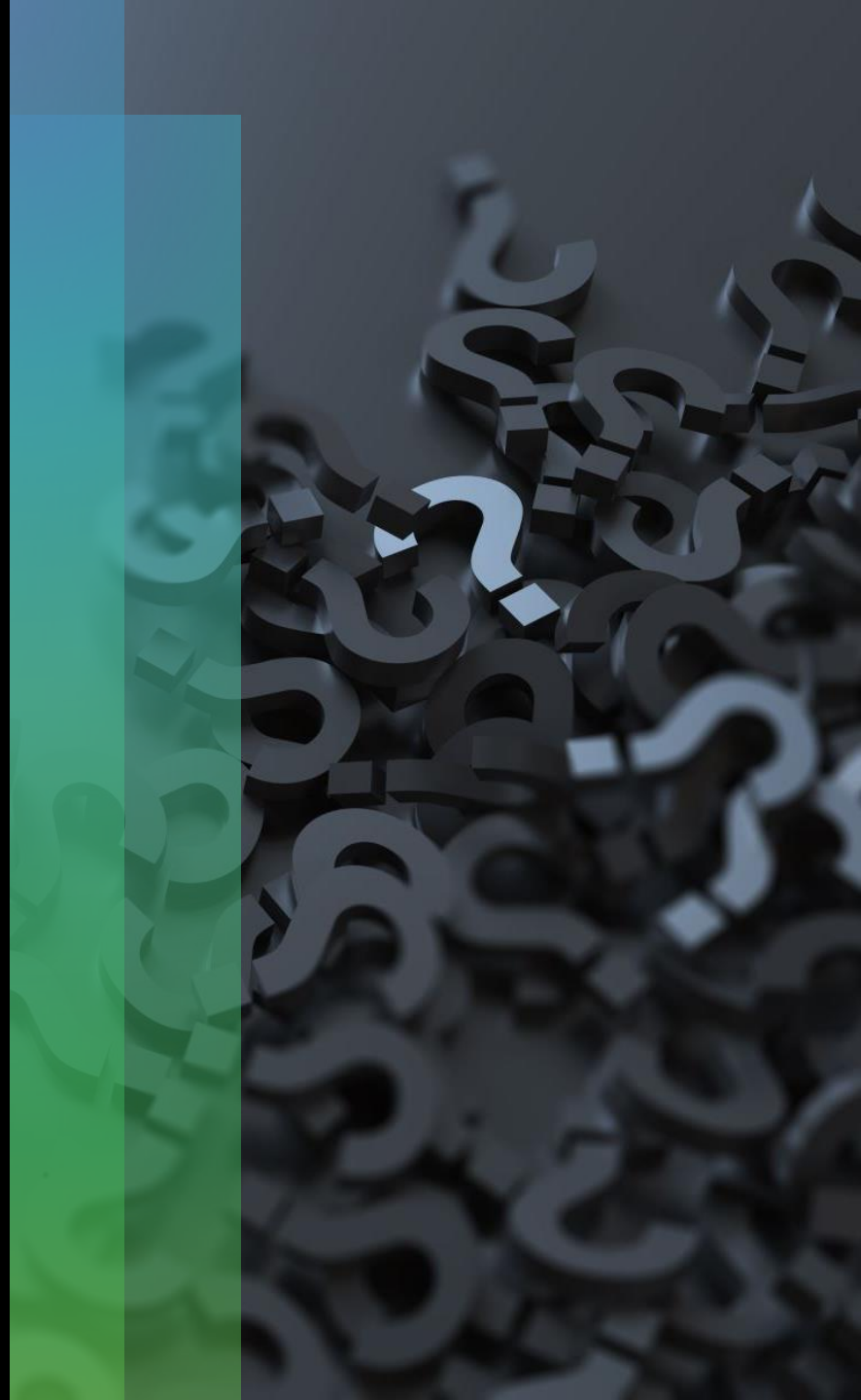
What is pointer in C-programming language

In the C programming language, a pointer is a variable that stores the memory address of another variable. Pointers are essential for tasks like dynamic memory allocation, working with arrays, and passing parameters to functions by reference. Here's a brief overview of pointers in C

1.Declaration: Pointers are declared using an asterisk (*) before the variable name. For example:copy code

- int *ptr; // Declares a pointer

2.Assignment: Pointers can be assigned the address of a variable using the address-of operator (&):copy codeint x = 10; int *ptr = &x; // ptr now points

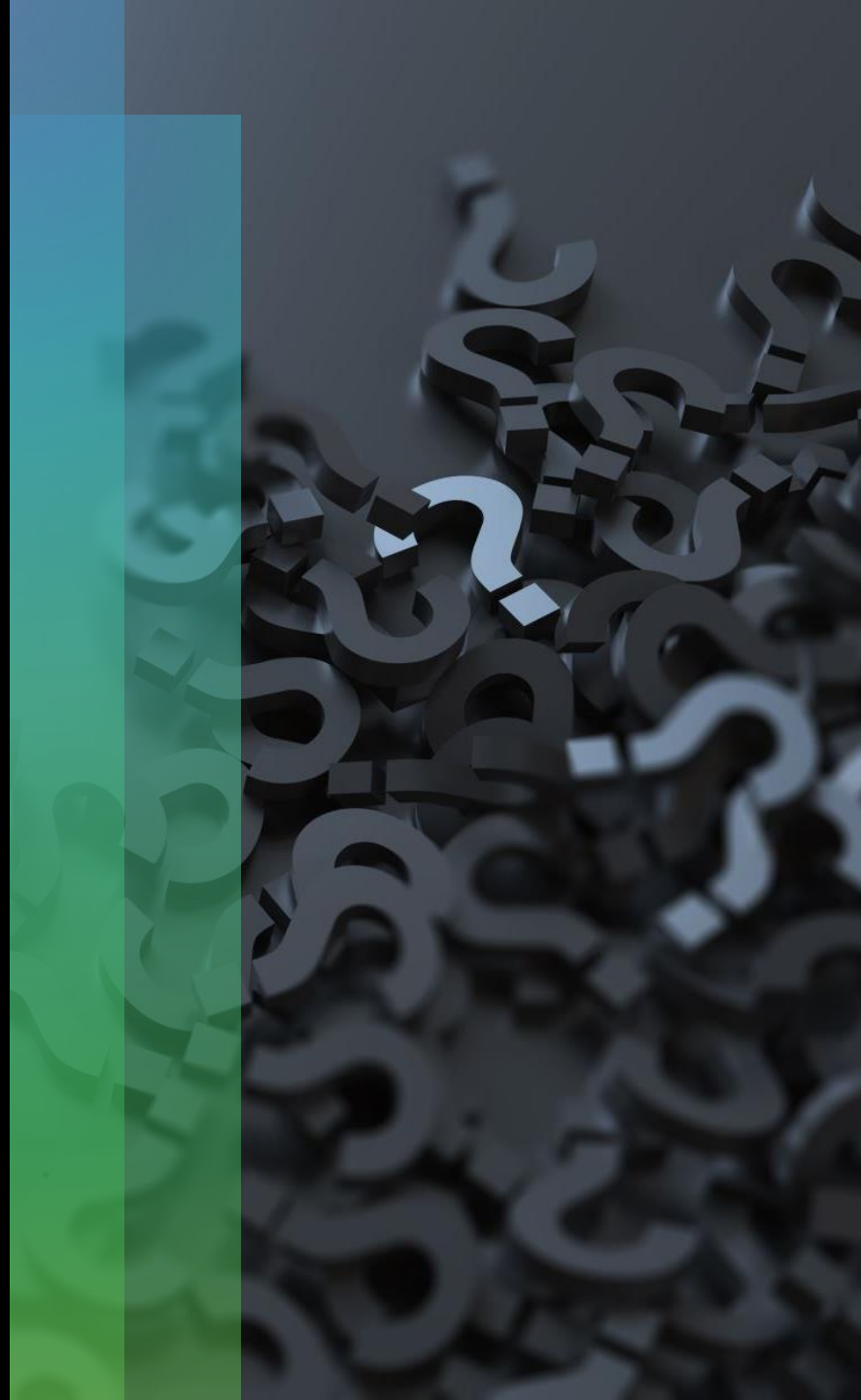


3.Accessing the Value: You can access the value stored at the memory location pointed to by a pointer using the dereference operator (*):copy codeint y = *ptr; // y now contain

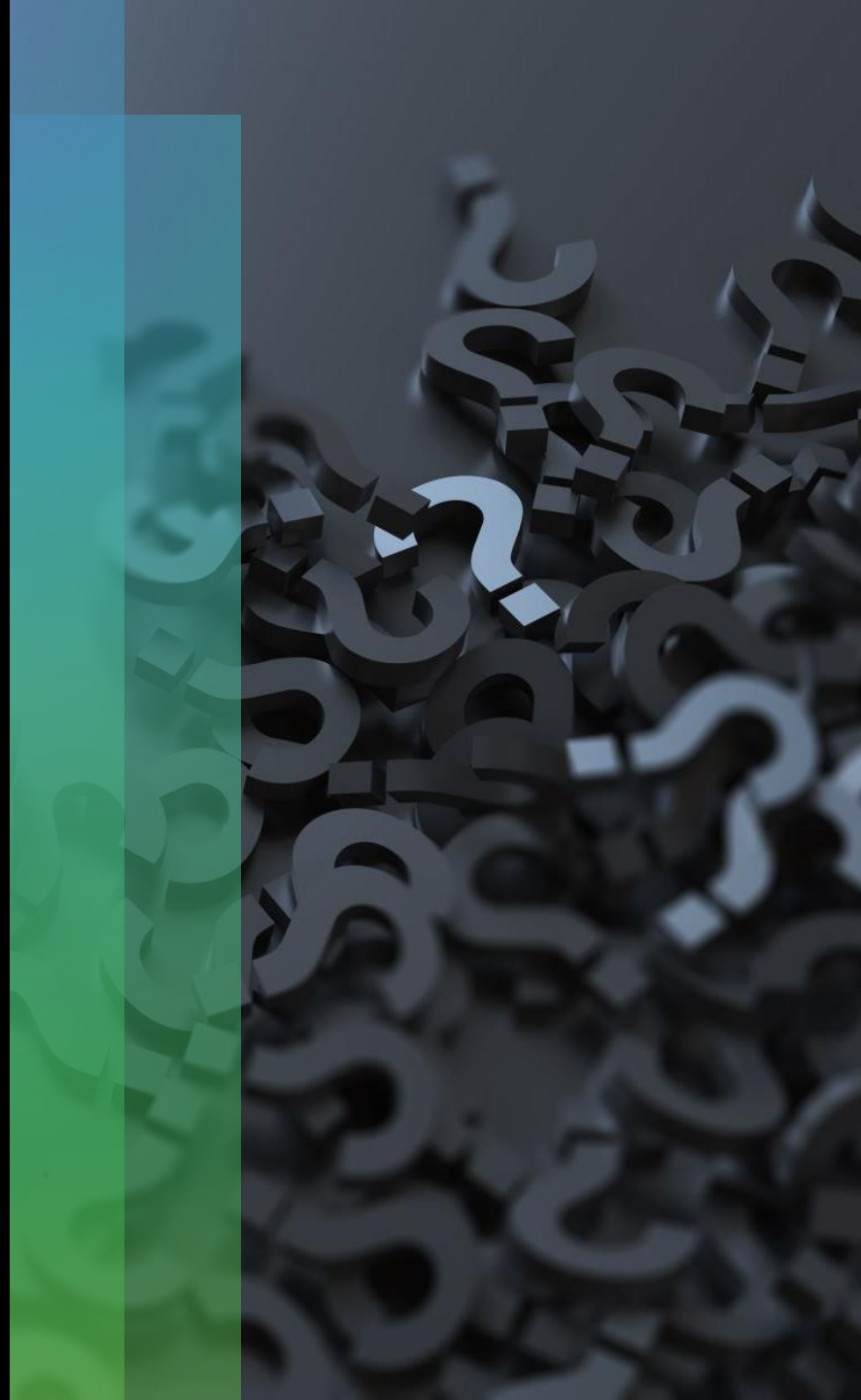
4.Pointer Arithmetic: Pointers can be incremented and decremented to move to the next or previous memory locations:copy codeptr++; // Moves ptr to the next

5.Null Pointers: Pointers can be assigned the special value NULL to indicate that they do not point to a valid memory location.

6.Pointer and Arrays: Arrays in C are closely related to pointers. The name of an array can be used as a pointer to its first element.



7.Pointers and Functions: Pointers can be used to pass variables by reference to functions, allowing the function to modify the original variable.



8.Dynamic Memory Allocation: Pointers are commonly used with functions like malloc and free to allocate and deallocate memory dynamically