Pointers in C++

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C++ course with PDF Notes

What are Pointers in C++ ?

Pointers are a very powerful feature of the language with many uses in programming.

Pointer is a variable that stores the address of another variable.

Some of the programing tasks are performed more easily with pointers such as dynamic memory allocation (i.e. obtaining memory at runtime from the system).

Every variable created in a program is stored in the memory.

The location of memory in a system can be accessed through the address.

The address of a variable can be accessed using ampersand (&) operator.

Why use Pointers in C++ ?

Dynamic Memory Management: Allocate and manage memory during runtime using functions like new and delete.

Efficient Array and String Handling: Direct access to memory helps manipulate arrays and strings efficiently.

Pass by Reference: Functions can modify the original data without creating copies by passing pointers.

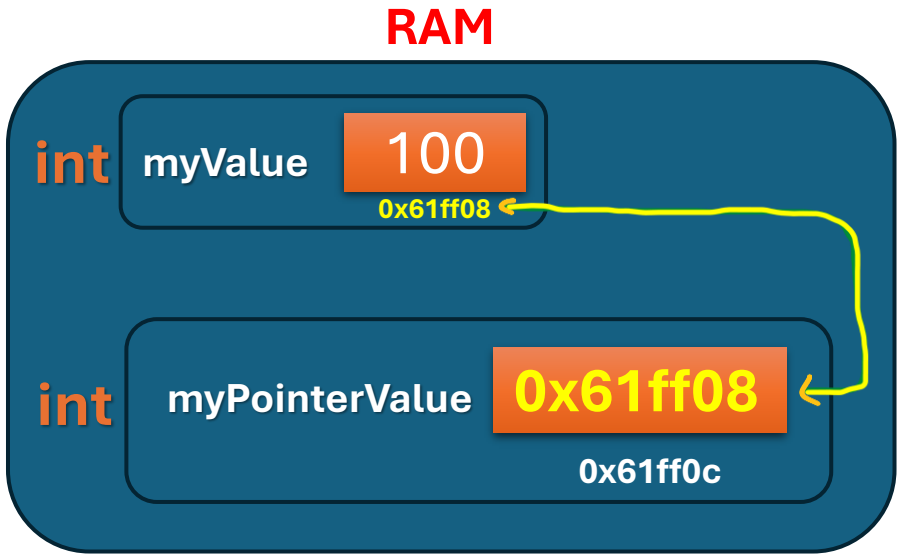
Complex Data Structures: Implement advanced structures like linked lists, trees, and graphs.

System-Level Programming: Interact with low-level memory and hardware.

Declaration and Initialization

```
datatype  *variable_name;
```

```
int  *ptr ;
```




```
int myValue = 100;
```

```
int *myPointerValue = &myValue;
```

```
cout<<myValue<<endl;            // 100
cout<<&myValue<<endl;           // 0x61ff08
cout<<*myPointerValue<<endl;    // 100
cout<<myPointerValue<<endl;     // 0x61ff08
cout<<&myPointerValue<<endl;    // 0x61ff0c
```

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