Pointer Data Type[*]

Kenneth Leroy Busbee

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Abstract

An introduction to the pointer data type as used within the C++ programming language.

1 Pointer Data Type in C++

A **pointer** variable is a variable that holds the address of a memory location. "Every variable is assigned
a memory location whose address can be retrieved using the address operator &. The address of a memory
location is called a pointer."[1] The **pointer data type** allows us to designate a variable to hold an address
or a pointer. The concept of an address and a pointer are one in the same. A pointer points to the location
in memory because the value of a pointer is the address were the data item resides in the memory. Given
an integer variable named age:

    int age = 47;

We can create a pointer variable and establish its value which would be the done using the **address
operator** [which is the **ampersand** or &] by:

    int * int_pointer = &age;

The **asterisk** is used to designate that the variable int_pointer is an integer pointer [int *]. This means
that whenever we use the variable int_pointer that the compiler will know that it is a pointer that points
to an integer.

In order to use pointers you will need to understand the **indirection operator** which is covered a
supplemental link.

2 Definitions

Definition 1: pointer
A variable that holds an address as its value.

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[1]Tony Gaddis, Judy Walters and Godfrey Muganda, <u>Starting Out with C++ Early Objects Sixth Edition</u> (United States of
America: Pearson – Addison Wesley, 2008) 597.