Character Data Type*

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Abstract

An introduction to the character data type.

1 Overview of the Character Data Type

The **character** data type basically represents individual or single characters. Characters comprise a variety of symbols such as the alphabet (both upper and lower case) the numeral digits (0 to 9), punctuation, etc. All computers store character data in a one byte field as an integer value. Because a byte consists of 8 bits, this one byte field has 28 or 256 possibilities using the positive values of 0 to 255.

Most microcomputers use the **ASCII** (stands for American Standard Code for Information Interchange and is pronounced "ask-key") Character Set which has established values for 0 to 127. For the values of 128 to 255 they usually use the Extended ASCII Character Set. When we hit the capital A on the keyboard, the keyboard sends a byte with the bit pattern equal to an integer 65. When the byte is sent from the memory to the monitor, the monitor converts the integer value of 65 to into the symbol of the capital A to display on the monitor.

The character data type attributes include:

C++ Reserved Word	char
Represent	Single characters
Size	1 byte
Normal Signage	Unsigned (positive values only)
Domain (Values Allowed)	Values from 0 to 127 as shown in the standard ASCII Character Set, plus values 128 to 255 from the Extended ASCII Character Set
	continued on next page

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C++ syntax rule	Single quote marks – Example: 'A'

Table 1

2 Demonstration Program in C++

2.1 Creating a Folder or Sub-Folder for Source Code Files

Depending on your compiler/IDE, you should decide where to download and store source code files for processing. Prudence dictates that you create these folders as needed prior to downloading source code files. A suggested sub-folder for the **Bloodshed Dev-C++ 5 compiler/IDE** might be named:

- Demo_Programs

If you have not done so, please create the folder(s) and/or sub-folder(s) as appropriate.

2.2 Download the Demo Program

Download and store the following file(s) to your storage device in the appropriate folder(s). Following the methods of your compiler/IDE, compile and run the program(s). Study the soruce code file(s) in conjunction with other learning materials.

Download from Connexions: Demo_Character_Data_Type.cpp[1]

3 Definitions

Definition 1: character
A data type representing single text characters like the alphabet, numeral digits, punctuation, etc.

Definition 2: ASCII
American Standard Code for Information Interchange

Definition 3: single quote marks
Used to create character type data within the C++ programming language.

[1] See the file at <http://cnx.org/content/m18669/latest/Demo_Character_Data_Type.cpp>