Learn C++ : Variables

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User Input

In C++, `std::cin`, which stands for "character input", can read user input from the keyboard.

Here, the user can enter a number, press `enter`, and that number gets stored in the variable `tip`.

```
int tip = 0;

std::cout << "Enter amount: ";
std::cin >> tip;
```

Variables

A *variable* refers to a storage location in the computer's memory that one can set aside to save, retrieve, and manipulate data.

Variables are denoted by a name.

```
// declare a variable
int score;

// initialize a variable
score = 0;
```

Arithmetic Operators

C++ supports arithmetic operators for:

- `+` addition
- `-` subtraction
- `*` multiplication
- `/` division
- `%` modulo (yields the remainder)

```
int x = 0;

x = 4 + 2;    // x is now 6
x = 4 - 2;    // x is now 2
x = 4 * 2;    // x is now 8
x = 4 / 2;    // x is now 2
x = 4 % 2;    // x is now 0
```

`int` Data Type

In C++, `int` is a type for storing integer (whole) numbers.

```
int age = 28;
```

`double` Data Type

In C++, `double` is a type for storing floating point (decimal) numbers.

```
double price = 8.99;
```

Chaining the Output

In C++, `std::cout` can output multiple values by *chaining* them using the output operator `<<`.

Here, the output would be `I'm 28.`

```
int age = 28;

std::cout << "I'm " << age << ".\n";
```

`char` Data Type

In C++, `char` is a type for storing individual characters. Characters are wrapped in single quotes.

```
char grade = 'A';
```

`string` Data Type

In C++, `std::string` is a type for storing text strings. Strings are wrapped in double quotes.

```
std::string message = "good nite";
```

`bool` Data Type

In C++, `bool` is a type for storing `true` or `false` boolean values.

```
bool late_to_work = true;
```