

Characteristics of Variables

Every variable has at least three characteristics.

- **Name**: used to access the data in your code.
- **Type**: used to determine the amount of memory required to store the variable, the representation or interpretation of the bits stored in memory at that location, and the operations that are legal on that memory location.
- **Value**: the **meaning** of the bits stored at the memory location selected by the compiler, when interpreted according to its type.

When you define a variable in a C++ program, the compiler makes sure that the variable is **allocated enough memory** to hold a value of that type. Here's an example:

```
int a = 3;           // name->a, type->int, value->3
auto b = 3.14159;    // name->b, type->double, value->pi
cout << a << endl;   // print value
cout << b << endl;   // print value
```



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