

C++

PENG

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1 Basics

1.1 Variables and Basic Types

Definition 1.1 (Primitive builtin types).

- *arithmetic types*:
 - *integral types*
 - * *characters*: `char`
 - * *integers*: `int`: signed or unsigned (≥ 0)
 - * *boolean values*: `bool`
 - *floating-point types*: `double`
- *void*

Remark 1.2. Use `double` for *floating-point computations*.

Example 1.3 (Type conversions).

```
bool b = 20; // 0 for false and nonzero values for true
int i = b;   // true for 1 and false for 0
```

Example 1.4 (signed and unsigned).

```
unsigned u = -1; // if 32-bit ints, 4294967295
int a = -1;
unsigned b = 1;
a * b // int value is converted to unsigned before addition
```

1.2 Statement