Explanation of #include and using namespace std in C++

1. #include

This line tells the compiler to include the iostream library, which allows the program to use input and output objects such as cout, cin, and endl. Without including iostream, you cannot perform basic input and output operations in C++.

2. using namespace std;

The std namespace contains standard C++ features such as cout, cin, string, vector, and many others. Writing using namespace std; allows the programmer to use these features without prefixing them with std::. For example, it lets you write cout instead of std::cout. However, in large programs, some developers prefer std::cout to avoid naming conflicts.

Float and Double in C++

In C++, float and double are used to store decimal numbers, but they differ in precision and memory size. A float uses 4 bytes of memory and stores about 6 to 7 decimal digits accurately, making it less precise but more memory efficient. A double uses 8 bytes of memory and stores about 15 to 16 decimal digits, providing higher precision and making it suitable for scientific or financial calculations where accuracy is important.