**int main():**

In C++, every program begins execution at the main() function.

It has a return type of int, which indicates the status of the program execution.

main() can also take parameters, typically argc and argv, which allow command-line arguments to be passed to the program.

What is a compiler:

**A compiler** is a software tool that translates high-level programming code (like C++) into machine code (binary) that the computer's processor can execute.

It performs various tasks including lexical analysis, parsing, optimization, and code generation.

The output of the compiler is usually an executable file that can be run on the target system.

Why is it important to choose correct variable names and not just short names:

**Descriptive variable names enhance code readability and maintainability.**

They make the code self-explanatory and reduce the need for comments.

Choosing meaningful names helps in understanding the purpose and usage of variables, functions, and other elements in the code.

**Boolean expressions:**

Boolean expressions evaluate to either true or false.

They are fundamental in controlling the flow of a program, especially in decision-making structures like if statements, while loops, and for loops.

Common boolean operators include == (equality), != (not equal), < (less than), > (greater than), <= (less than or equal to), >= (greater than or equal to), && (logical AND), || (logical OR), and ! (logical NOT).

**Data types:**

Data types define the type of data that variables can hold and the operations that can be performed on them.

Examples include integers (int, long, short), floating-point numbers (float, double), characters (char), booleans (bool), and more.

Data types help in efficient memory allocation and manipulation of data.

**Function order in C++:**

In C++, functions must be declared or defined before they are used.

If a function is defined after its use, a function prototype (declaration) is necessary to inform the compiler about the function's signature before it's called.

**Loops (for, do while, while):**

Loops are control structures that repeat a block of code until a specified condition is met.

The for loop is commonly used for iterating over a range of values.

The while loop repeats a block of code as long as a specified condition is true.

The do while loop is similar to the while loop but guarantees that the block of code is executed at least once before checking the condition.

**if-else:**

The if-else statement is used for decision-making in C++.

It allows executing different blocks of code based on whether a specified condition is true or false.

It can be extended with else if clauses to handle multiple conditions sequentially.

**Array data structures:**

Arrays are collections of elements of the same data type, stored in contiguous memory locations.

They provide a convenient way to store and access multiple values using a single variable.

Array elements are accessed using zero-based indices, meaning the first element has an index of 0, the second has an index of 1, and so on.

**Zero-based index:**

In C++, array indices start from 0, with the first element being accessed at index 0.

This convention is consistent with many programming languages and is widely adopted in computer science and software engineering.

**size\_t explained:**

size\_t is an unsigned integer data type used for storing sizes and indices of objects in memory.

It is guaranteed to be big enough to represent the maximum possible size of any object in the current environment.

It's commonly used for array indexing.