Components of C++?

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C++ course with 📄 Notes

C++ is superset of C

At the basic level the program looks similar in both C and C++

Every statement in C++ ends with semicolon (;)

All the reserved words must be written in small cases, and the C++ compiler is case sensitive

Data types

A data type in a programming language is a set of data with values having predefined characteristics. Like C language, C++ also supports different data types. C++ language supports the following data types:
char, int, float, double. The basic datatypes have various modifiers preceding them. The list of modifiers are: signed, unsigned, long and short. The datatypes supported in C++ are listed below:

Basic Data types in C++

Data Type	Size (in bytes)	Values that can be taken
Signed int	2	-32768 to 32767
unsigned int	2	0 to 65535
Signed Char	1	-128 to 127
unsigned char	1	0 to 255
Float	4	3.4×10^{-38} to 3.4×10^{38} (Precision 7)
Double	8	1.7×10^{-308} to 1.7×10^{308} (Precision 15)
long double	10	3.4×10^{-4932} to 1.1×10^{4932} (Precision 19)
long int	4	-2147483648 to 2147483647
short int	2	-31768 to 32767

↳ It may be distinct as per C++ compiler

Variables

Variable is container of data

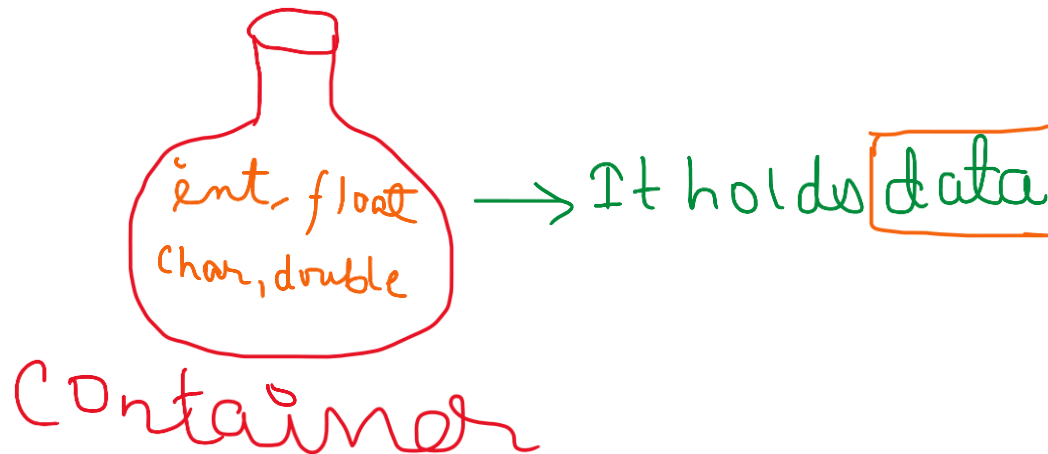Variables are names used to refer some memory location

Variables can be names as per the following rules:

Variable name must begin with a letter.
Variable name contains letters, numbers and underscore.
Variable names are case sensitive.
Reserve words of C++ cannot be used

int, float
char, double → It holds data

Container

Variable declaration & Initialization

int a;

↳ data type

↳ Variable name

Semicolon

int a = 5;

Semi colon

data type

variable name

assignment operator

↳ data values

Tokens in C++

Identifies   **Keywords**   **Constants**   **Operators**

name of Variable

reserved words

Value does not Change

Const int a = 5;

C++ Supports all C operators
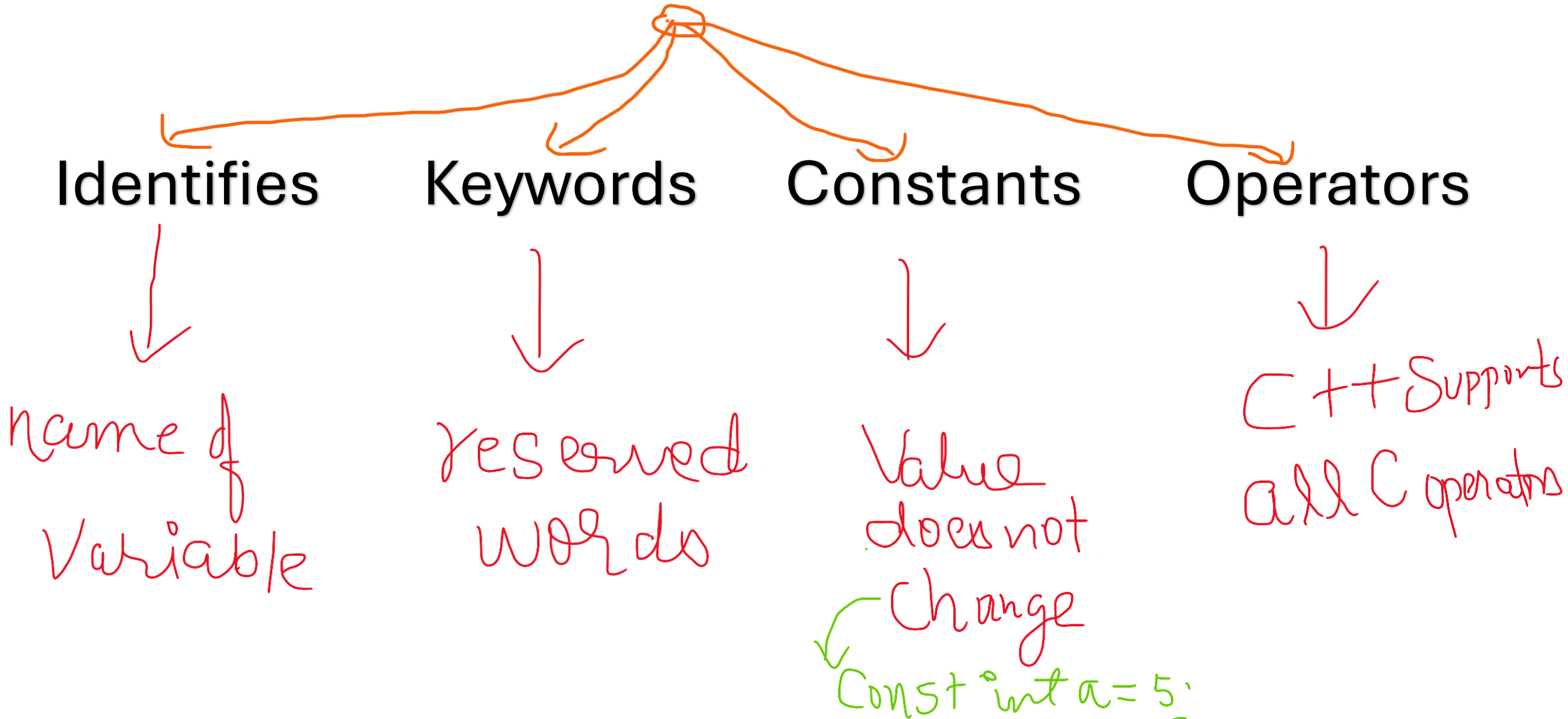
Operators in C++

Arithmetic

- **+** — Plus
- **-** — minus
- ***** — multiplication
- **/** — Divide
- **%** — Modulus
- **++** — Increment
- **--** — Decrement

Relational

- **>** — greater than
- **<** — less than
- **<=** — less OR equal
- **>=** — greater OR equal
- **==** — equal-to-operator
- **!=** — NOT equal

Logical

- **&&** — logical AND
- **||** — Logical OR
- **!** — → logical NOT

Bit-wise

- **&** — Bitwise AND
- **|** — Bitwise OR
- **^** — Bitwise XOR
- **~** — Bitwise NOT

C++ I/O Methods: cin,cout

<iostream.h> $\rightarrow$ header file

cin $\rightarrow$ input object

$\hookrightarrow$ >> extraction operator
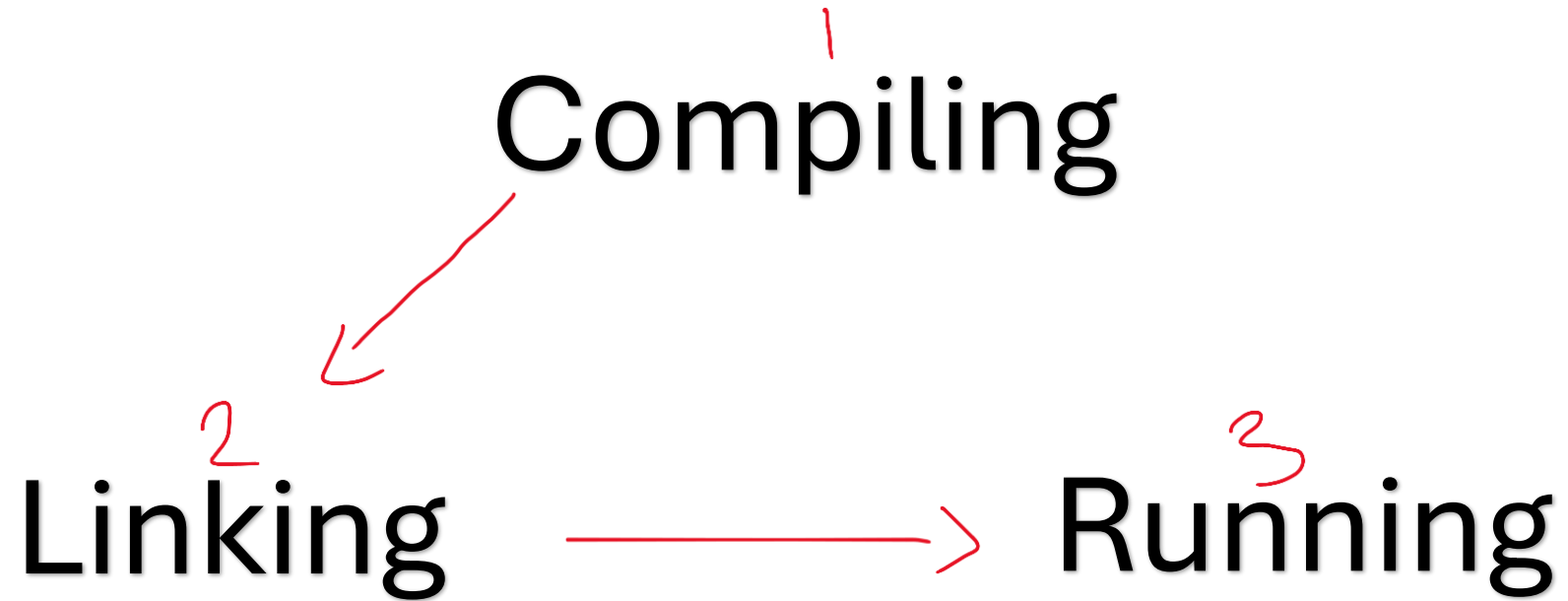
cout $\rightarrow$ Output object

$\hookrightarrow$ << Insertion operator

Structure of C++ programs:

Documentation section
Header file section
Class declaration or definition section
Class function definition section
Main () function section

Compiling and Executing of C++ program:

Compiling

Linking ⟶ Running

Simple C++ Program

```cpp
#include <iostream>
using namespace std;
int main(){

    cout << "Hello, World!" << endl;

    return 0;
}
```

Thanks for Watching

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