

Basic data types in C/C++

- Integer:
 - char (1 byte)
 - unsigned char (1 byte)
 - short (2 bytes)
 - unsigned short (2 bytes)
 - int (its size depends on the target platform).
 - unsigned int (its size depends on the target platform)
 - long (8 bytes)
 - long long (8 bytes)
- Floating-point
 - float (4 bytes)
 - double (8 bytes)
- Boolean (only on C++):
 - true
 - false
- Void

Remarks:

- In C, there isn't built-in boolean type, so a non-zero integer is equivalent to true, and a zero integer is equivalent to false.
- There is a header which define "true" as 1 and "false" as 0: "stdbool.h"

basic statement type in C/C++

- Declaration, Definition
- Expression
- Block statement (can contain more than 1 statement)
- Condition: if/else, switch/case
- Loop: for, while, do/while
- break, continue, goto
- Null (;)
- Exception handling statements (only for C++)

if/else

- Type 1:

```
if (condition) statement;  
  
if (condition)  
    statement;
```

- Type 2:

```
if (condition) statement; else statement;

if (condition)
    statement;
else
    statement;
```

- Type 3:

```
if (condition) statement; else if (condition) statement; ... else statement;

if (condition)
    statement;
else if (condition)
    statement;
...
else
    statements;
```

switch/case

```
switch (value):
{
    case value1a:
    case value1b:
    ...
        statements;

    case value2a:
    case value2b:
    ...
        statements;

    ...
    default:
        statements;
}
```

for loop

```
for (init_statement; condition; loop_expression) statement;
```

```
for (init_statement; condition; loop_expression)
    statement;
```

while loop

```
while (condition) statement;

while (condition)
    statement;
```

do/while loop

```
do { } while (condition);

do {

} while (condition);

do
{

} while (condition);
```