TYPES OF LITERALS

C++ BASICS

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TOPIC OUTLINE

Integer Literals

Floating-Point Literals

Character Literals

String Literals

Boolean Literals

TYPES OF LITERALS

LITERALS

A **literal** is a notation in the source code that directly represents a fixed, constant value. Unlike variables or expressions, literals are the **actual values** themselves.

INTEGER LITERALS

Integer literals represent **whole numbers**. It can be written in decimal, octal, hexadecimal, or binary formats.

Examples:

```
int decimal = 24;

int octal = 052;

int hexadecimal = 0x2A;

int binary = 0b101010;
```

FLOATING-POINT LITERALS

Examples:

```
double decimal = 5.15;
// 6.02 × 10^23
double exponential = 6.02e23
```

Floating-point literals represent **real numbers** (numbers with fractional parts). It can be written in decimal or exponential notation.

CHARACTER LITERALS

Character literals represent single characters enclosed in **single quote**.

Examples:

```
char character = 'A';

char newline = '\n';

// hexadecimal representation of 'A'
char hexChar = '\x41';
```

Escape sequences are used to represent **special characters**. They start with backslash **(\)** followed by a specific character.

ESCAPE SEQUENCES

Escape Sequence	Description	Example
`\n`	Newline	`cout << "Hello\nWorld";`
`\t`	Horizontal tab	`cout << "Name:\tJohn";`
`\\`	Backslash	`cout << "C:\\folder\\file";`
`\'`	Single quote	`char c = '\'';`
`\"`	Double quote	`cout << "\"Hello\"";`
`\a`	Alert (bell)	`cout << "\a";`
`\b`	Backsapce	`cout << "Hello\b";`
`\f`	Form feed (page break)	`cout << "Hello\fWorld";`
`\r`	Carriage return	`cout << "Hello\rWorld";`
`\v`	Vertical tab	`cout << "Hello\vWorld";`
`\xhh`	Hexadecimal	`char c = '\x41'; (ASCII 'A')`
`\ooo`	Octal	`char c = '\101'; (ASCII 'A')`

STRING LITERALS

Examples:

```
string message = "Hello, World!";
```

String literals represent sequences of characters enclosed in **double quotes**.

BOOLEAN LITERALS

Examples:

```
bool status = true;

bool status = false;
```

Boolean literals represent **true** or **false** values.

LABORATORY