



# Specialities of C++

**From templates and abusive prime numbers**

# Agenda

I. History of C++

II. Peculiarities

III. Templates

IV. Examples

V. Hands-On



# History of C++

- Start of Development 1979
- Target: C with classes
- Use Cases: System & Application programming
- Today: Extended generic programming features
- Multiple Standards (ISO/IEC)



# Peculiarities

- Compiled language
- Memory management
- Object orientation
- Functional programming
- Generic programming → **Templates**



# Templates

- Also called “Metaprogramming”
- C++ equivalent to JAVA generics
- 3 types of templates (function, class, variable)
- Basis for STL
- Especially useful for:
  - Data structures
  - Static optimizations
- Turing complete!



```
17 string sInput;  
18 int iLength, iN;  
19 double dblTemp;  
20 bool again = true;
```

```
21 while (again) {  
22     iN = -1;  
23     again = false;  
24     getline(cin, sInput);  
25     system("cls");  
26     stringstream(sInput) >> dblTemp;  
27     iLength = sInput.length();  
28     if (iLength < 4) {  
29         again = true;  
30         continue;  
31     } else if (sInput[iLength - 3] != '.') {  
32         again = true;  
33     }  
34 }
```

**Thank you!**

