

Modern C++ Course



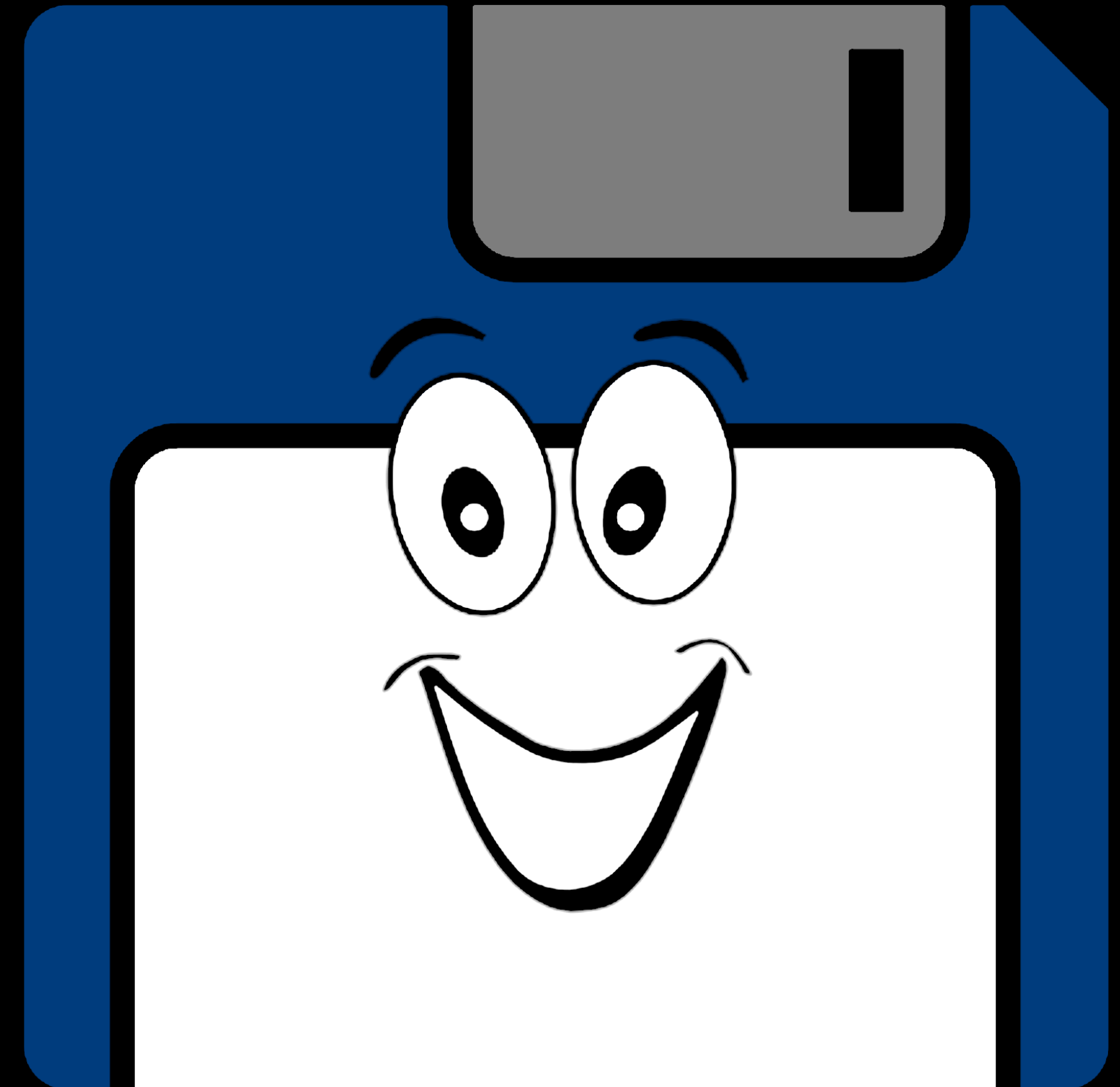
Who am I ?

Gammasoft

Gammasoft aims to make c++ fun again.

About

- Gammasoft is the nickname of Yves Fiumefreddo.
- More than thirty years of passion for high technology especially in development (c++, c#, objective-c, ...).
- Object-oriented programming is more than a mindset.
- more info see my GitHub : <https://github.com/gammasoft71>



Outline

1. Introduction
2. Language Basics
3. Object Oriented Programming (OOP)
4. Core Modern C++
5. Modern C++ Expert
6. Advanced Programming



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Language Basics

- Hello World
- Core syntax and types
- Arrays and Pointers
- Scopes / namespaces
- Class and enum types
- References
- Functions
- Operators
- Control structures
- Headers and interfaces
- Auto keyword
- Inline keyword
- Assertions



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The classic first application



The classic first application

program.cpp




```
#include <iostream>

int main() {
    std::cout << "Hello, World!" << std::endl;
}
```



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CMakeLists.txt



```
cmake_minimum_required(VERSION 3.20)

project(hello_world)
add_executable(${PROJECT_NAME} program.cpp)
```



The classic first application

program.cpp

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● ● ●  
  
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int main() {  
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CMakeLists.txt

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project(hello_world)  
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```

Output

```
● ● ●  
  
> Hello, World!
```



The classic first application

program.cpp

```
● ● ●  
  
#include <print>  
  
auto main() -> int {  
    std::println("Hello, World!");  
}
```

CMakeLists.txt

```
● ● ●  
  
cmake_minimum_required(VERSION 3.20)  
  
project(hello_world)  
set(CMAKE_CXX_STANDARD 23)  
set(CMAKE_CXX_STANDARD_REQUIRED ON)  
add_executable(${PROJECT_NAME} program.cpp)
```

Output

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● ● ●  
  
> Hello, World!
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