Cpp Convention – Class

# 0

Each class has its own dedicated header file and source code file

# 1

Header file comment

image

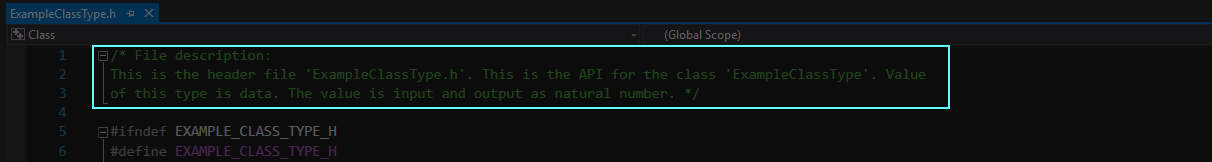


image end

# 2

Source code file comment

image

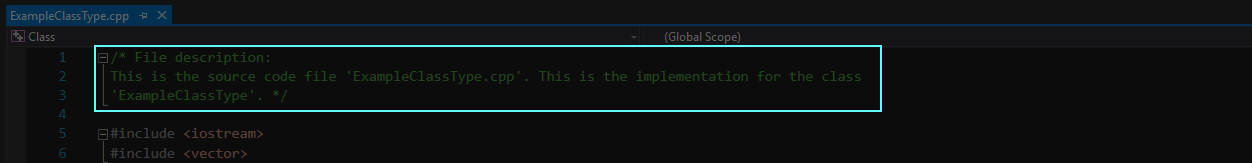


image end

# 3

A source code file must obey the following order to include the header file of a class

image



image end

A source code file including the header file of a class must contain instructions (if any)

# 4

Class definition

Class definition defense – Avoiding multiple definitions of a class

image

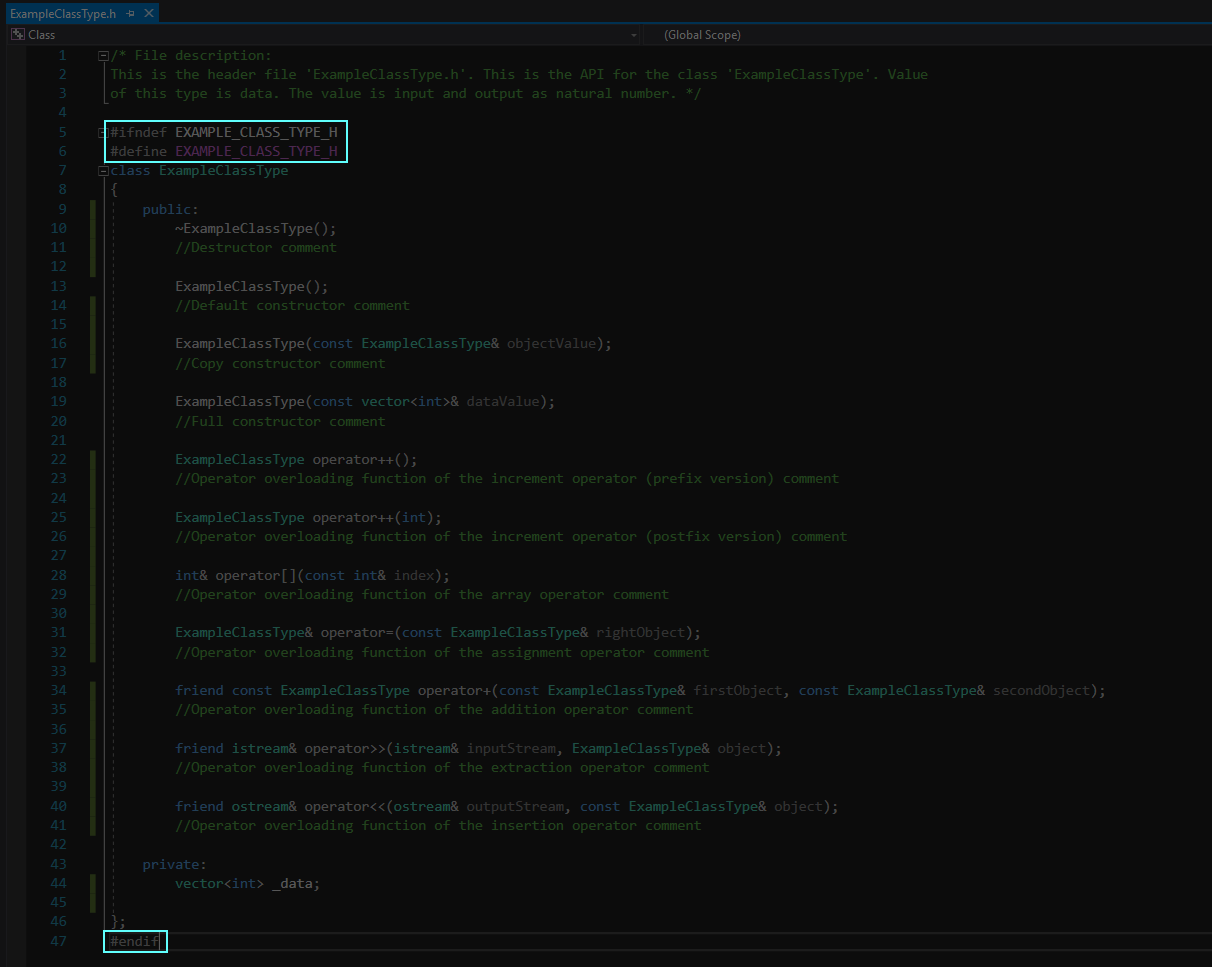


image end

Public first, Private second

Class member variables must be private

Class destructor must always be a virtual function

Always contains BIG5 member functions (destructor, default constructor, copy constructor, full constructor, operator overloading function of the assignment operator)

image

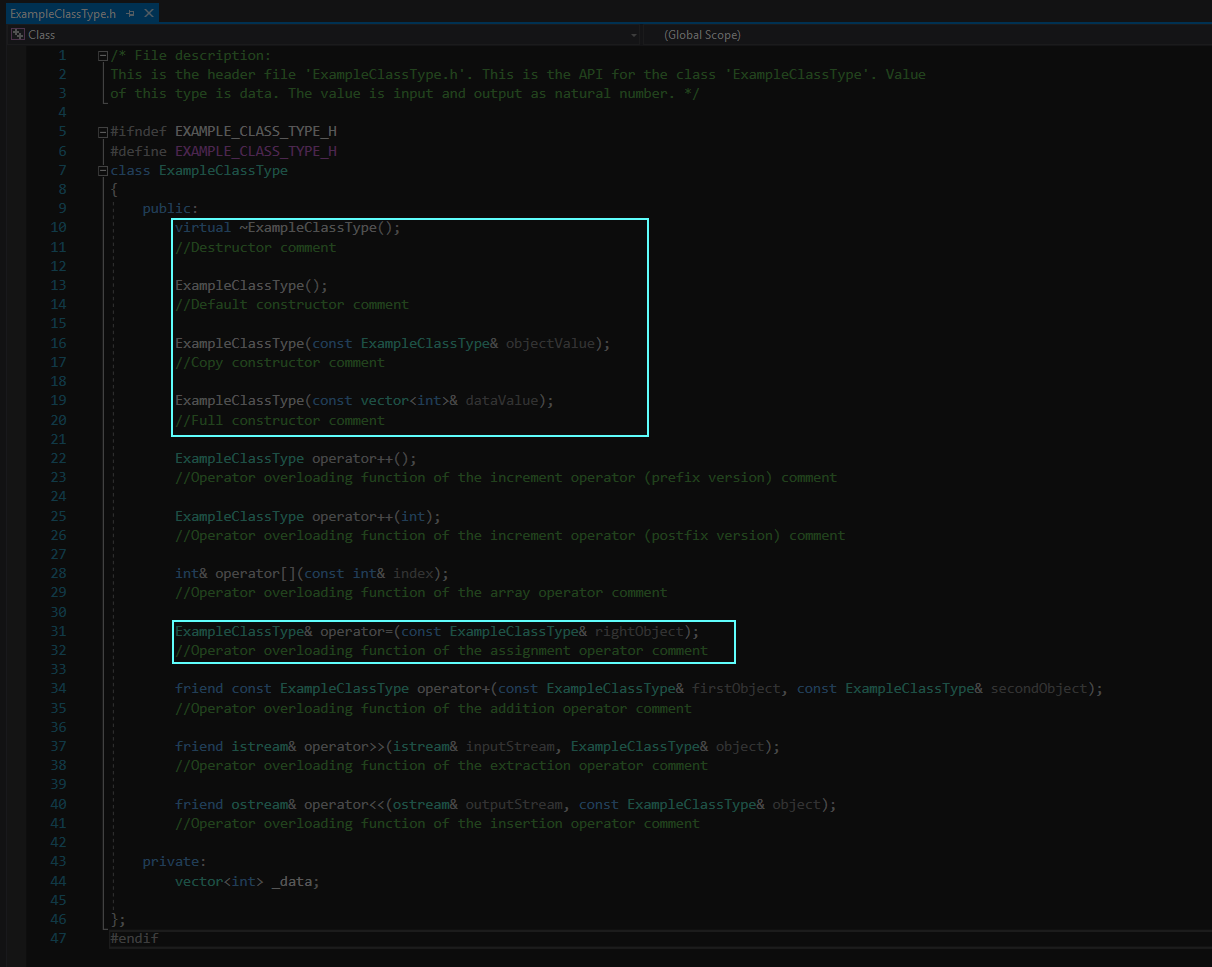


image end

# 5

Constructor definition

Use both initialization section and definition’s body (for checking errors)

image

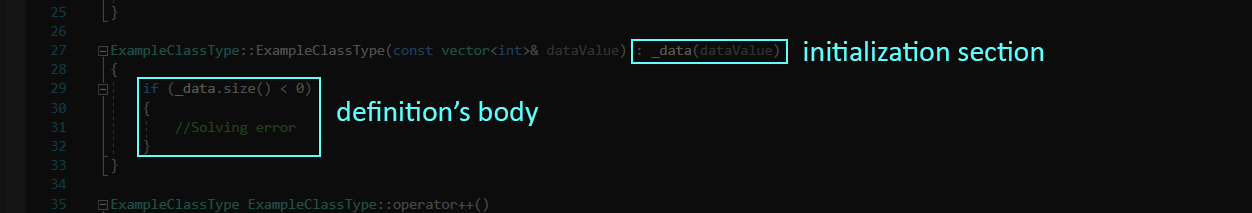


image end

Always use constructor delegation

image

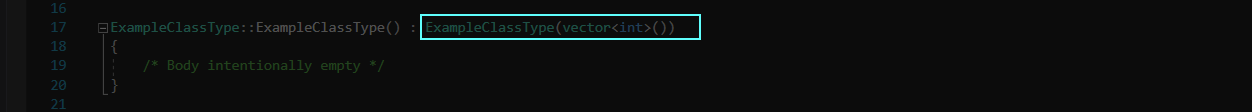


image end

In default constructor’s initialization section, always initialize class member variable using the default constructor of its type

image

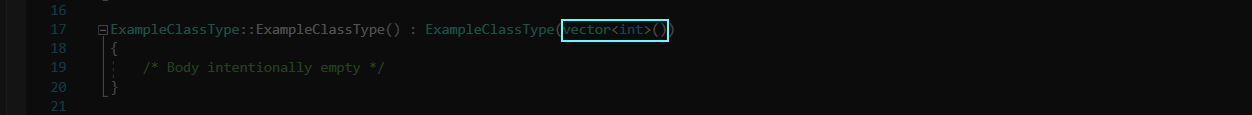


image end

# 6

ACCESSOR FUNCTION DECLARATION AND DEFINITION

Use modifier

If return member variables, return as a constant return-by-reference value

# 7

Class static variables must be initialized in the source code file of the class

# 8

Class friend functions must be declared and defined in the header file and the source code file of the class, respectively

# 9

NAMING

Abstract class name starts with the word

Parameter name of constructor:

Parameter name of Set member function:

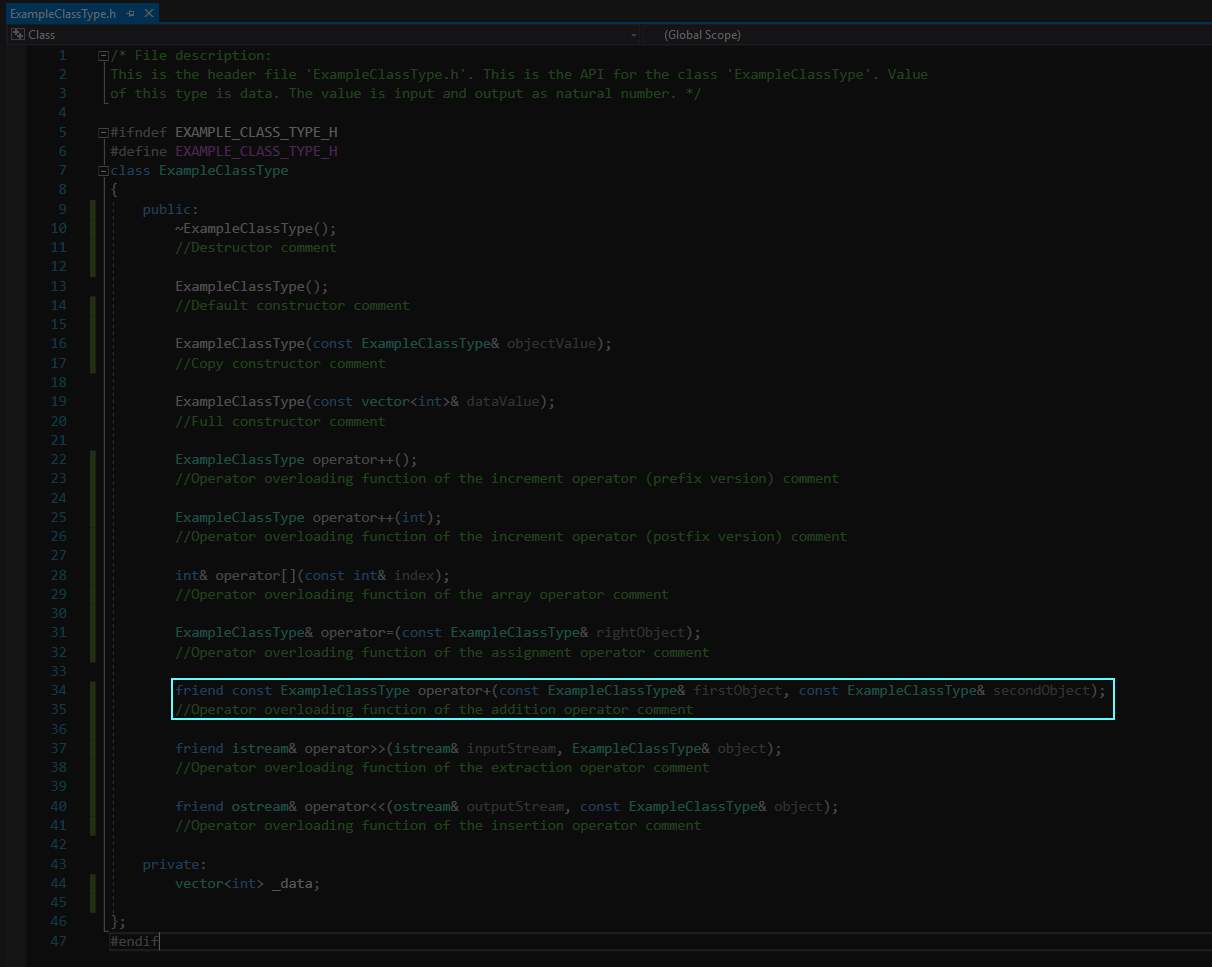
Class member variables name starts with the underscore symbol

# 10

OPERATOR OVERLOADING FUNCTION TEMPLATES

## Addition operator

image



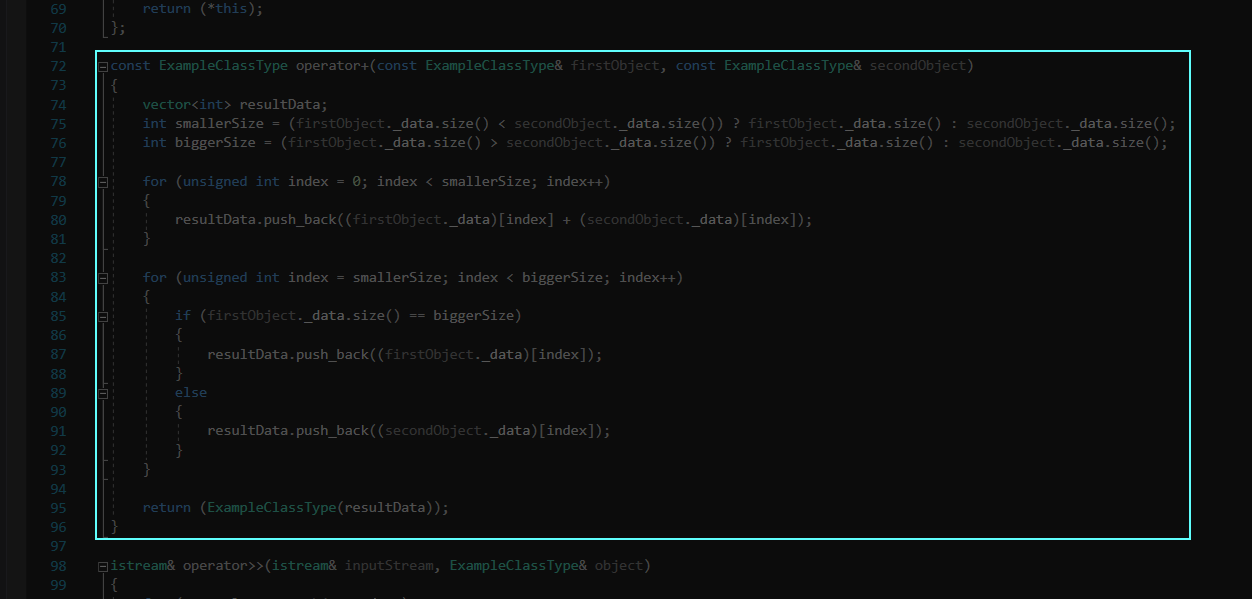
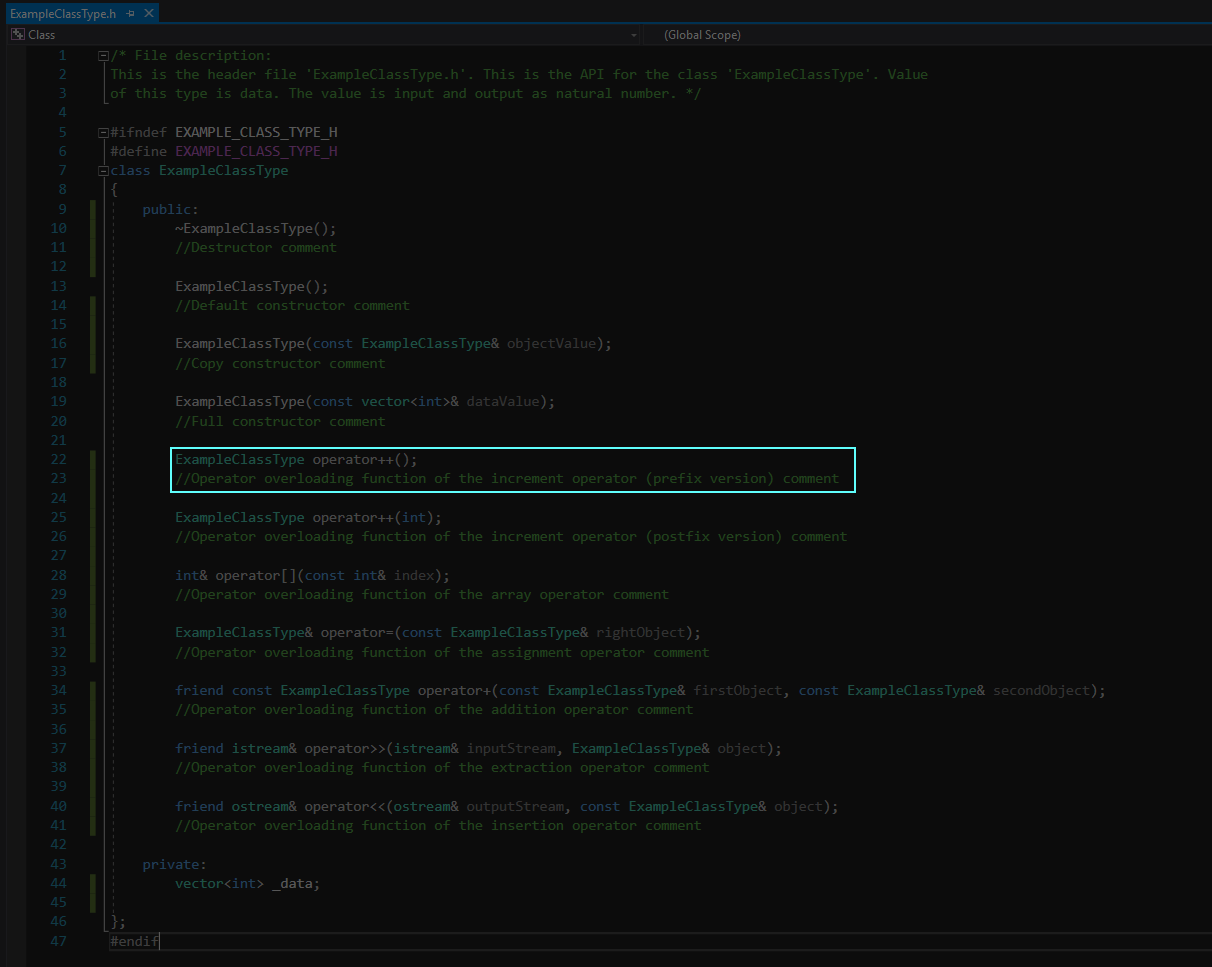


image end

## Increment operator (prefix version)

image



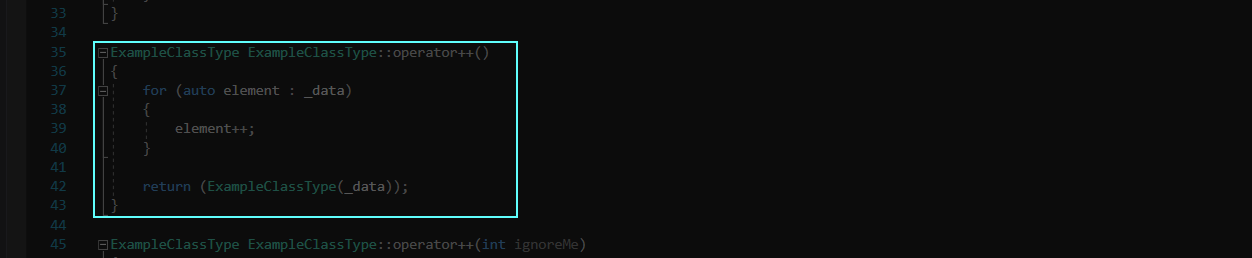
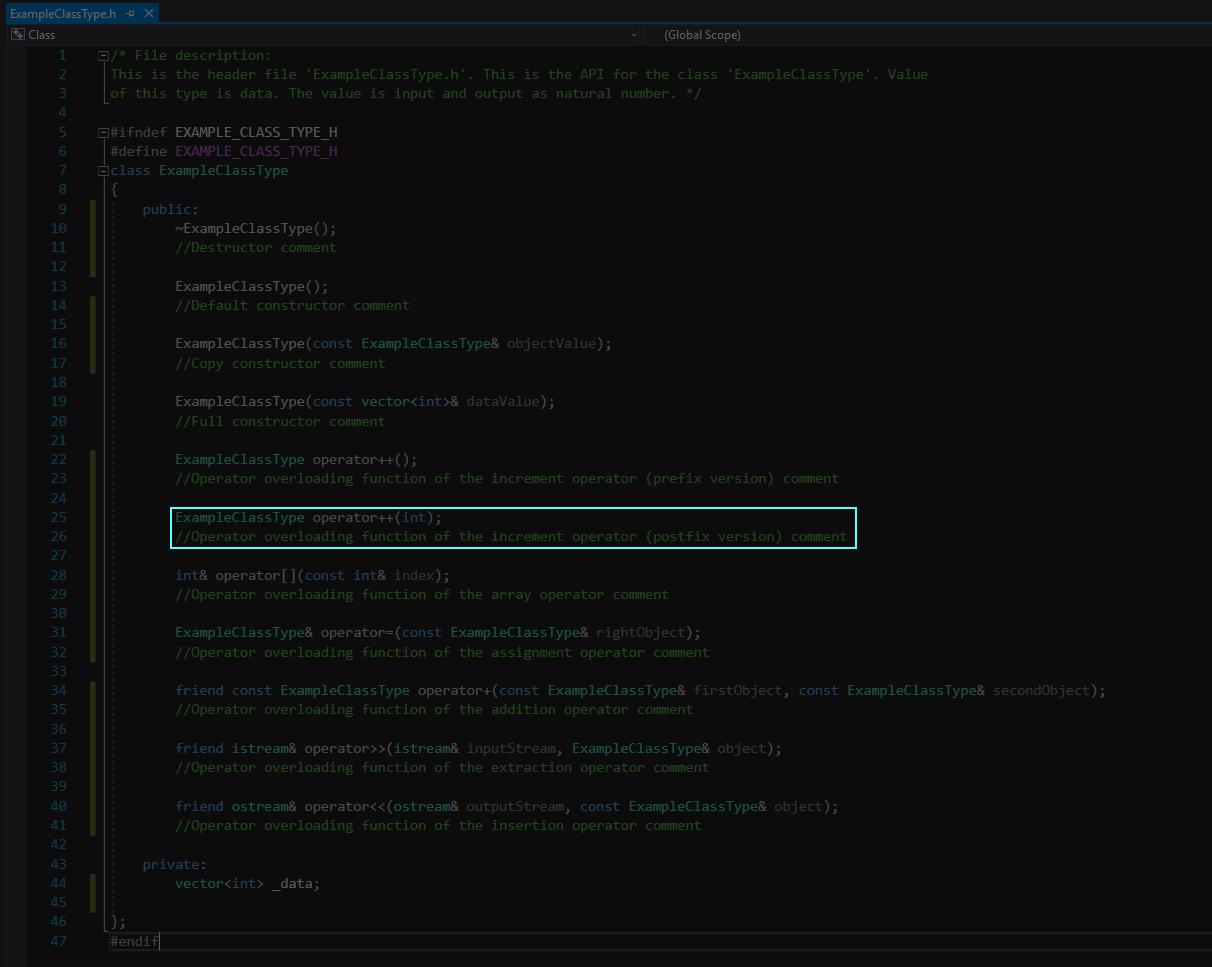


image end

## Increment operator (postfix version)

image



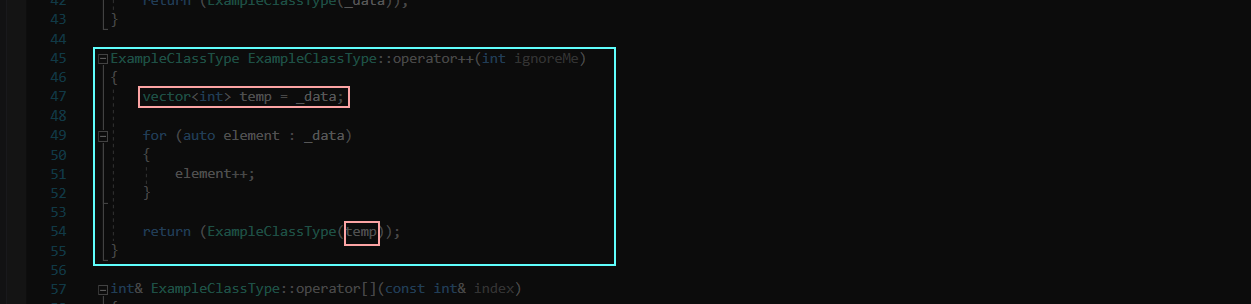
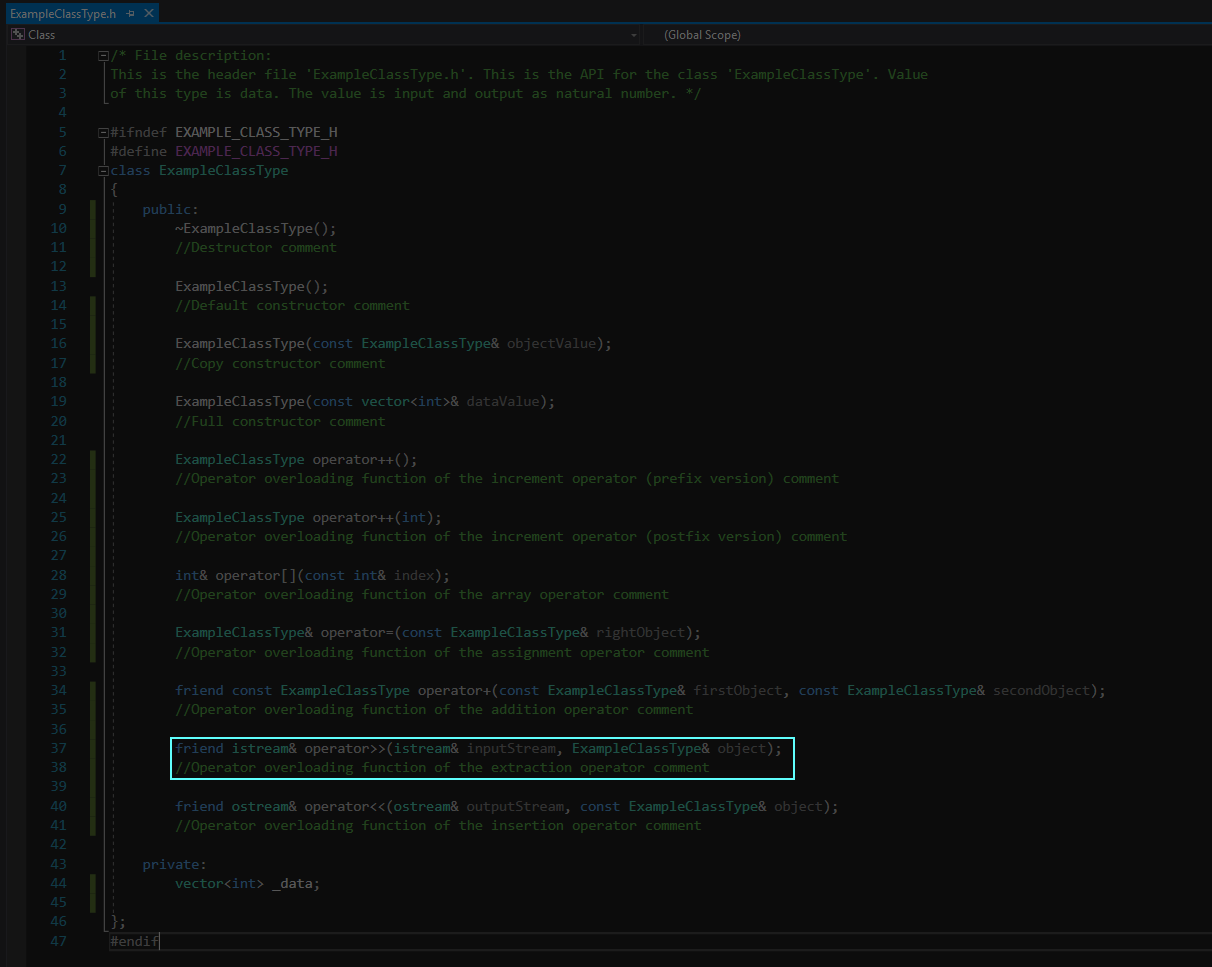


image end

## Extraction operator

image



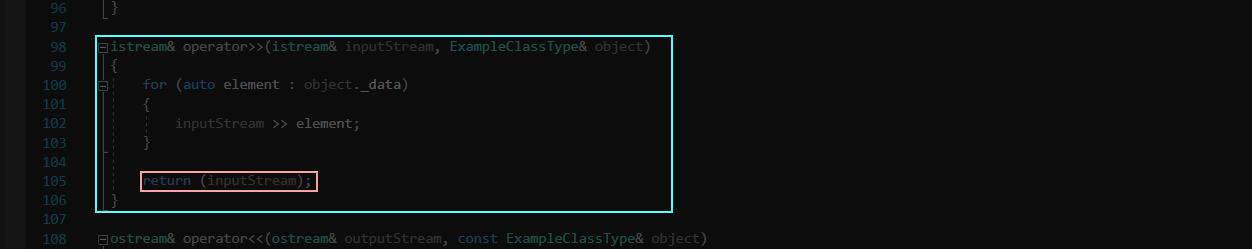
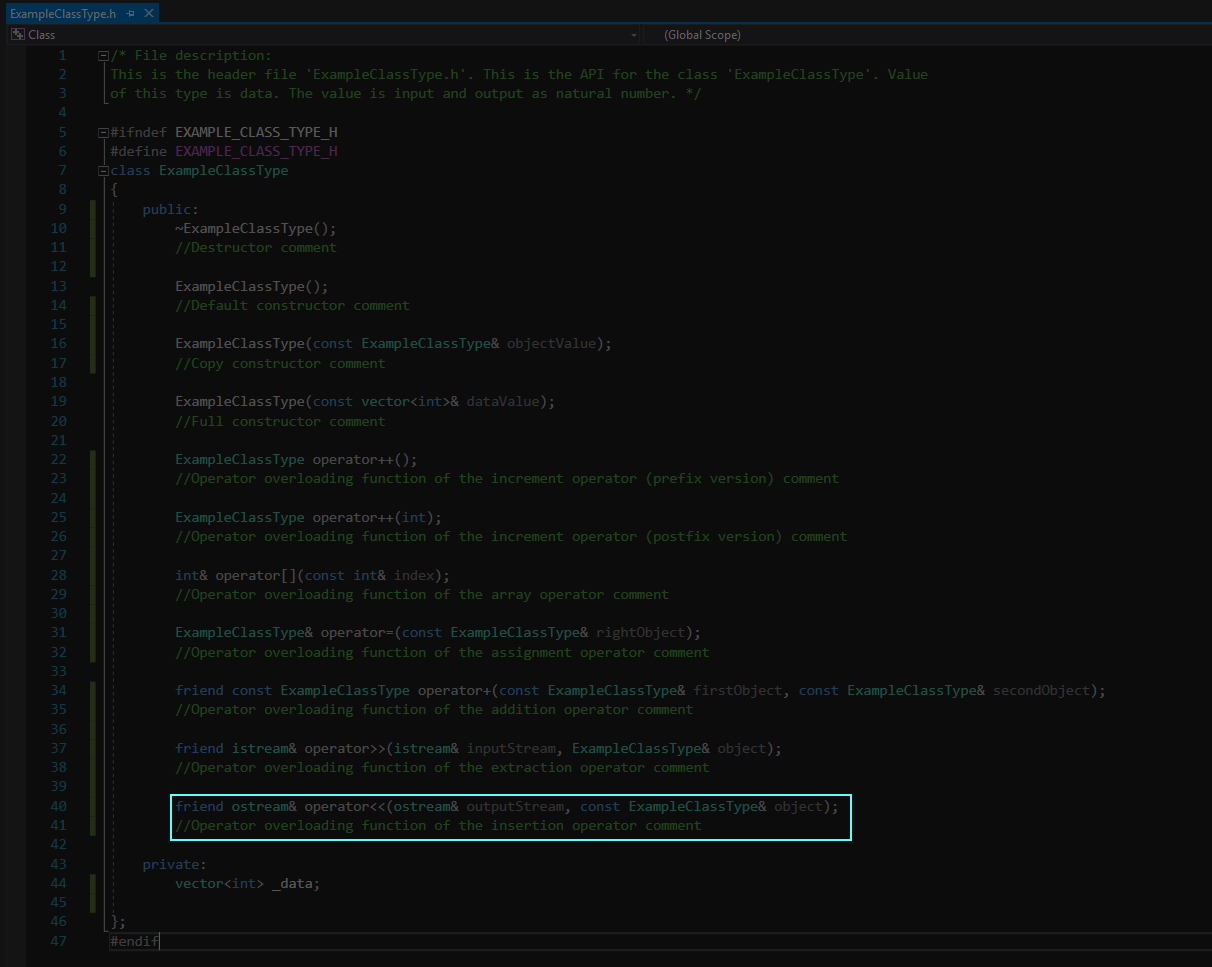


image end

## Insertion operator

image



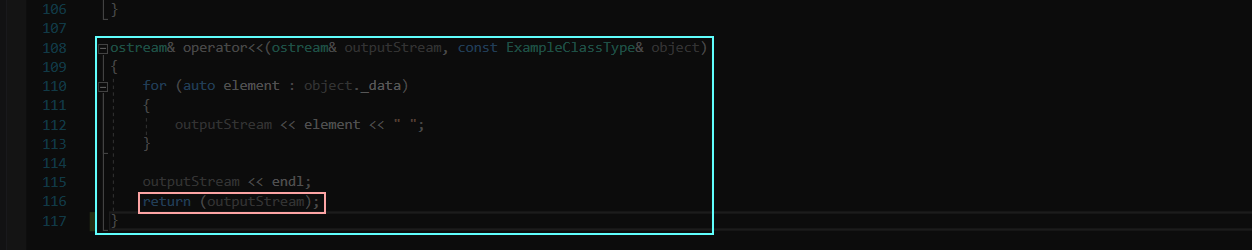
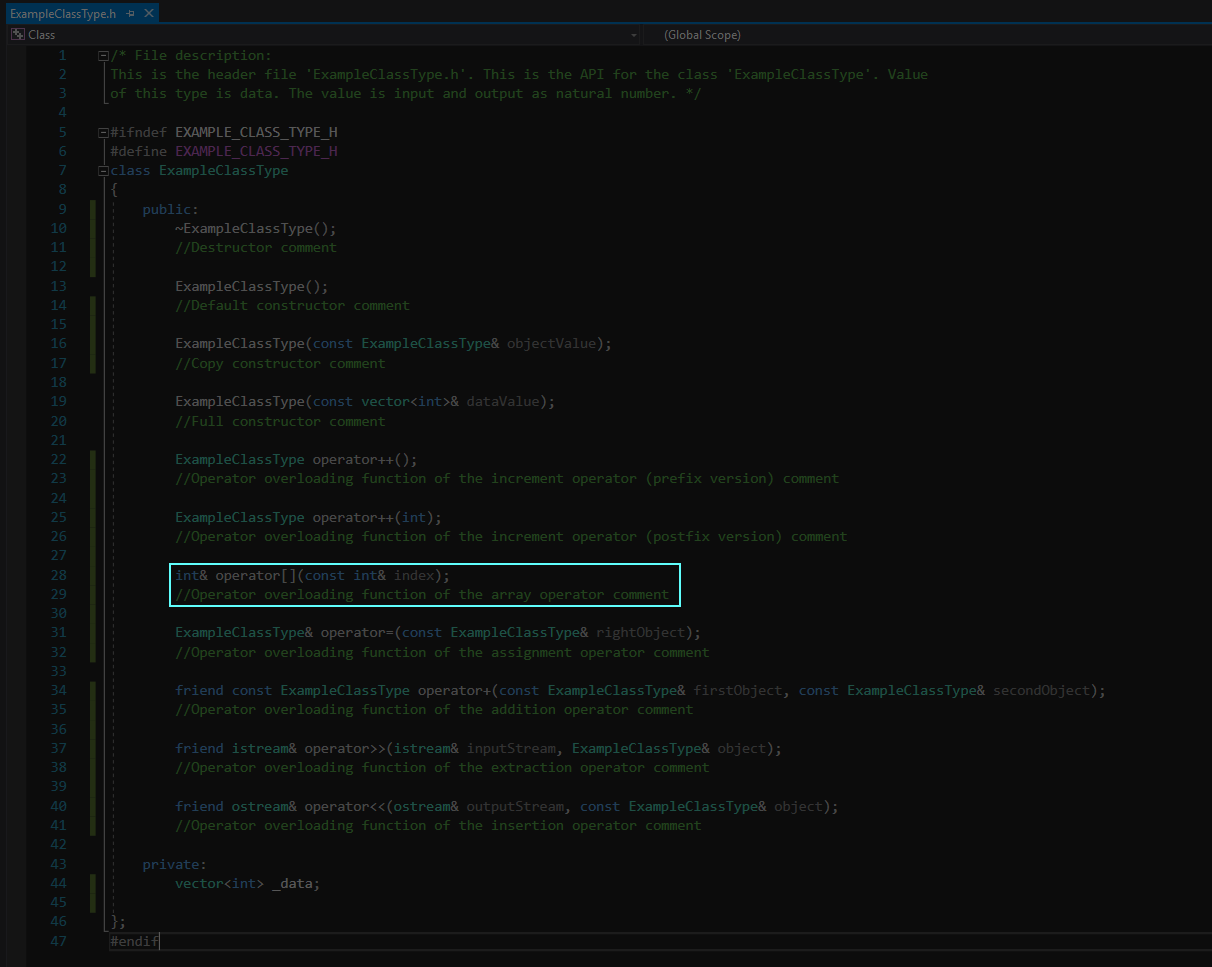


image end

## Array operator

image



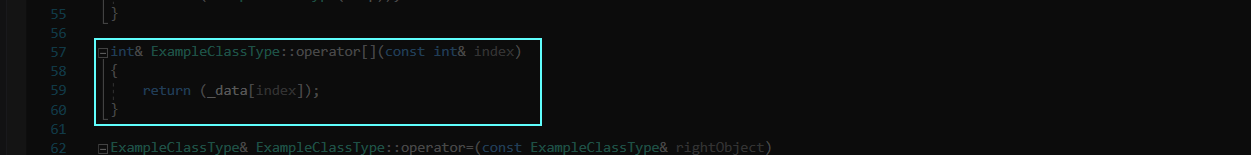
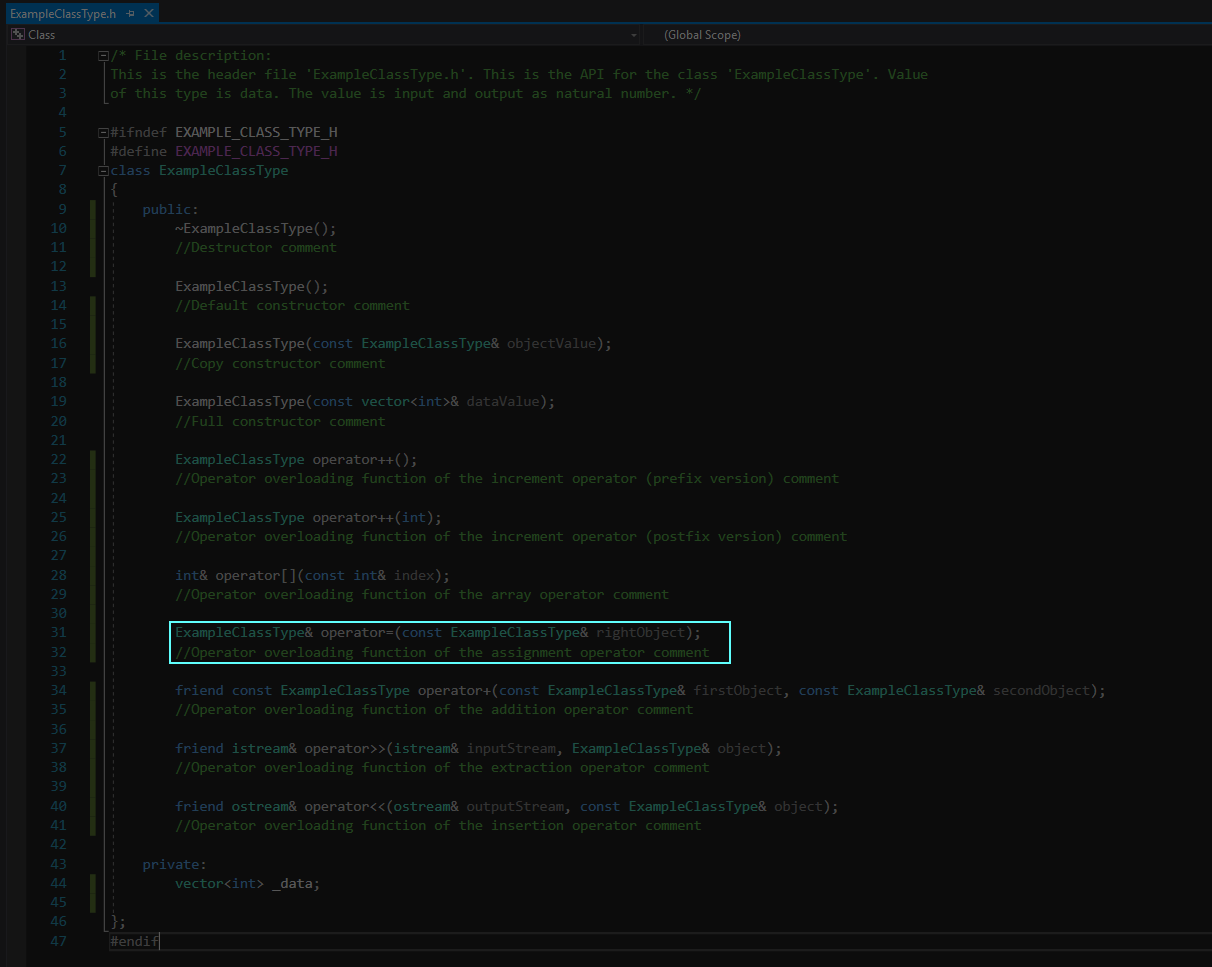


image end

## Assignment operator

image



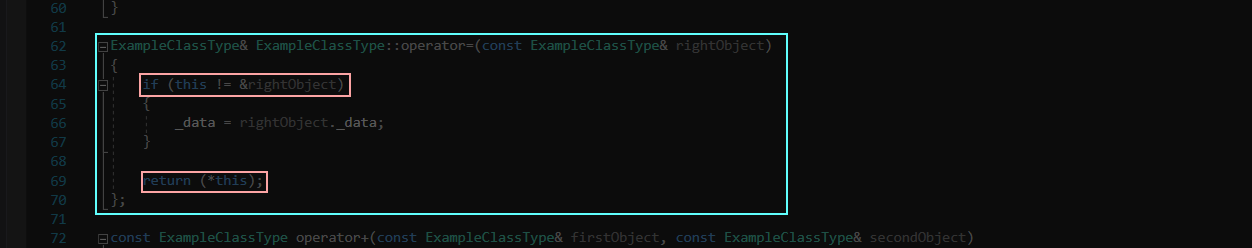


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# 11

DERIVED CLASS BIG5 MEMBER FUNCTIONS TEMPLATES

## DESTRUCTOR

image

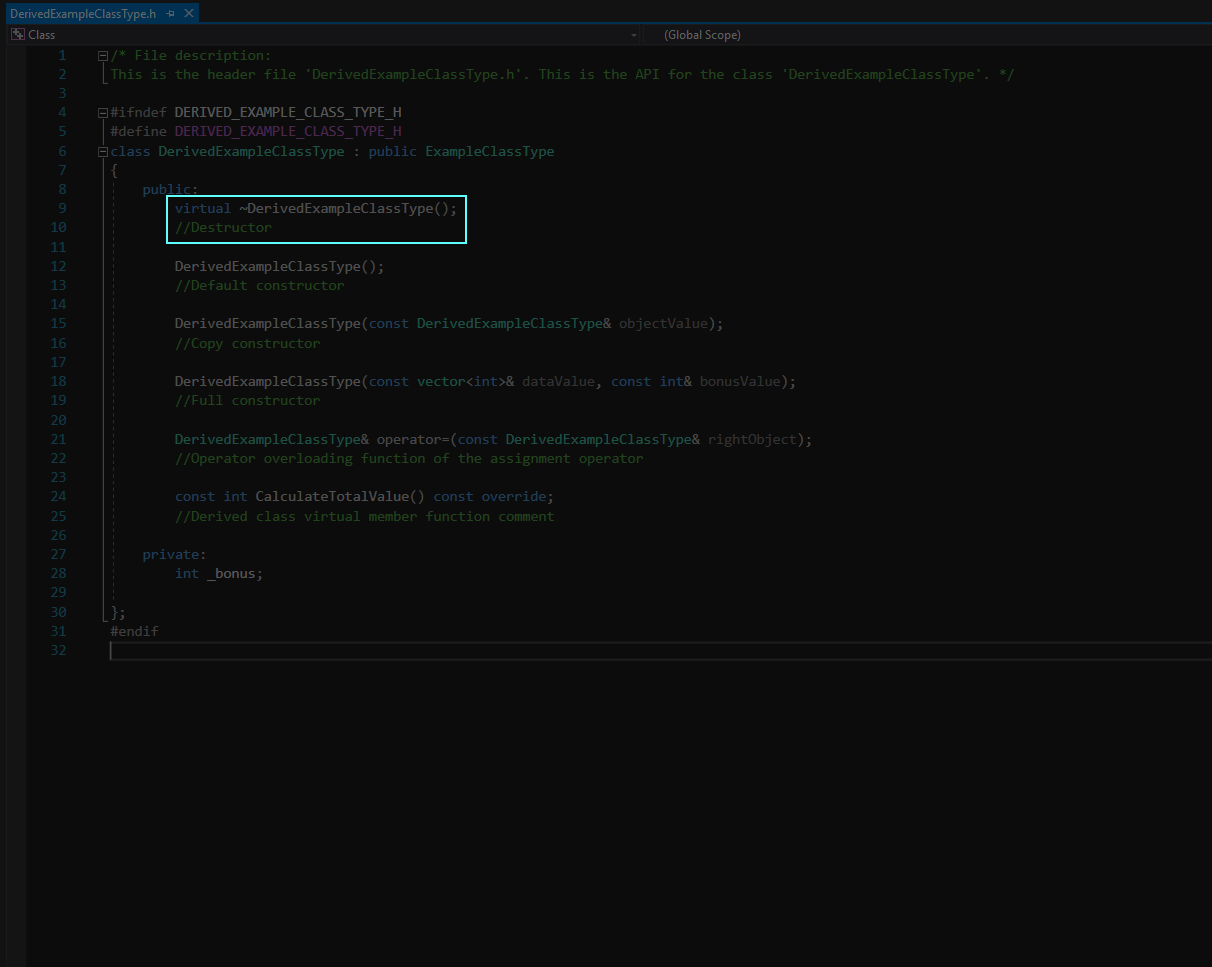
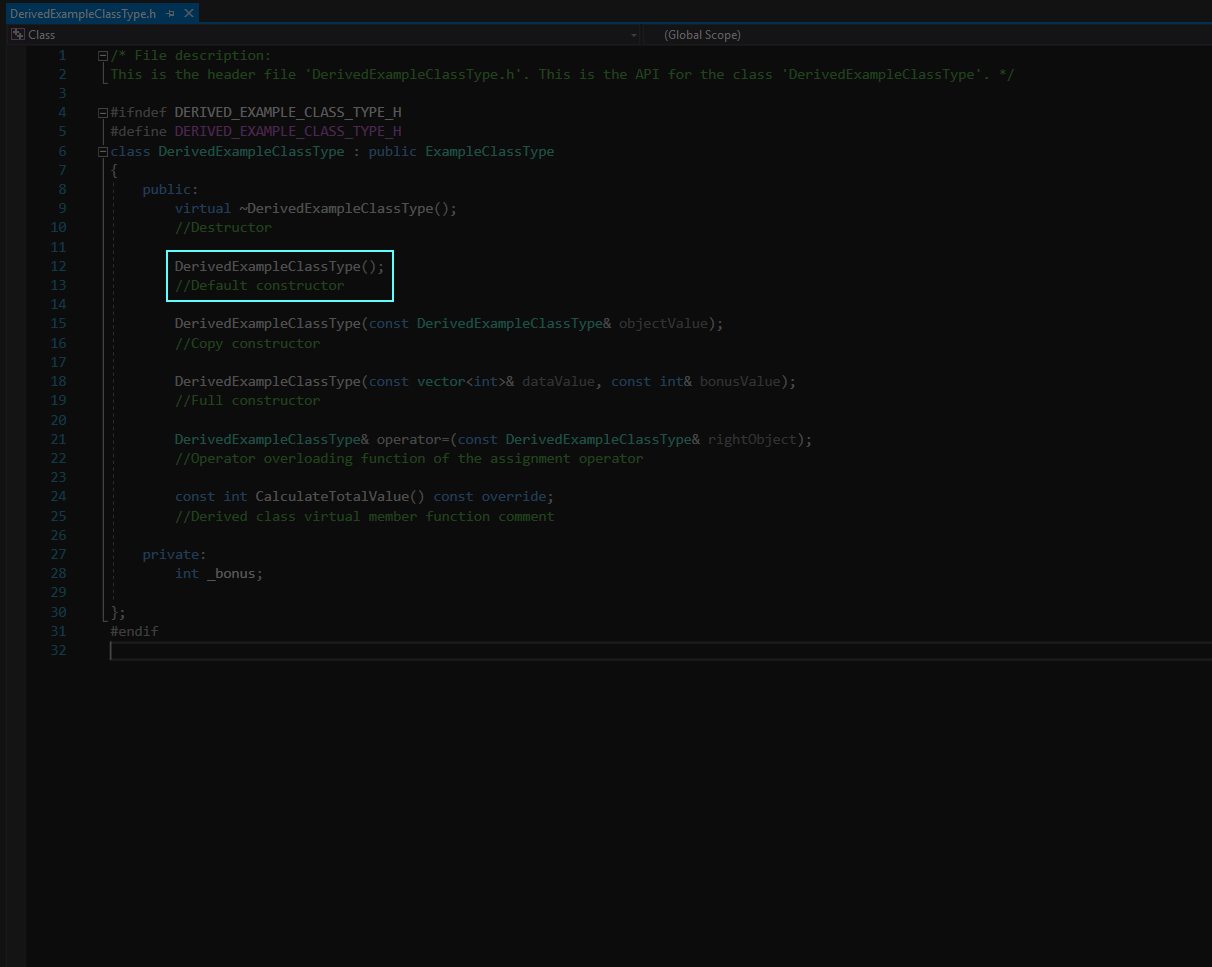




image end

## DEFAULT CONSTRUCTOR

image



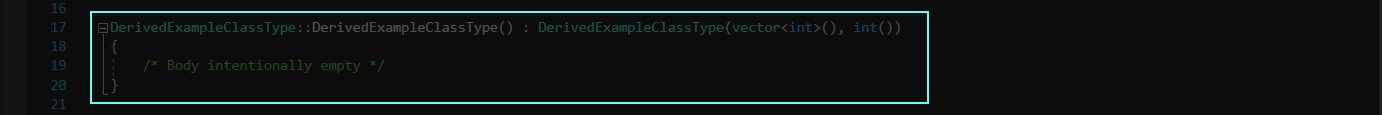
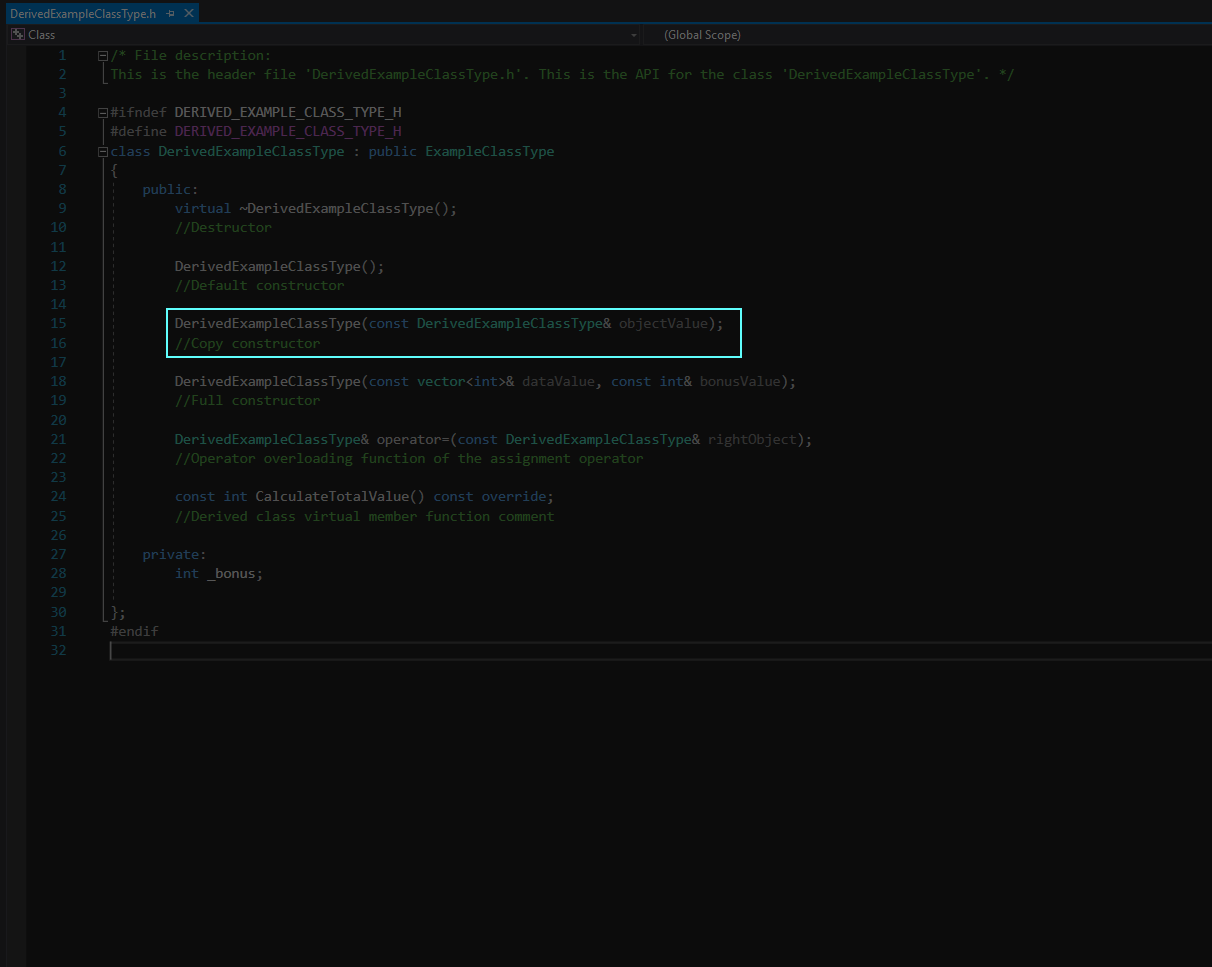


image end

## COPY CONSTRUCTOR

image



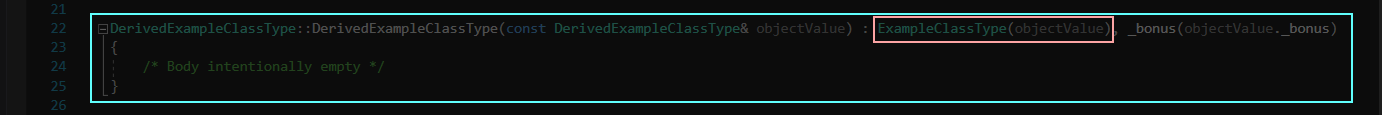
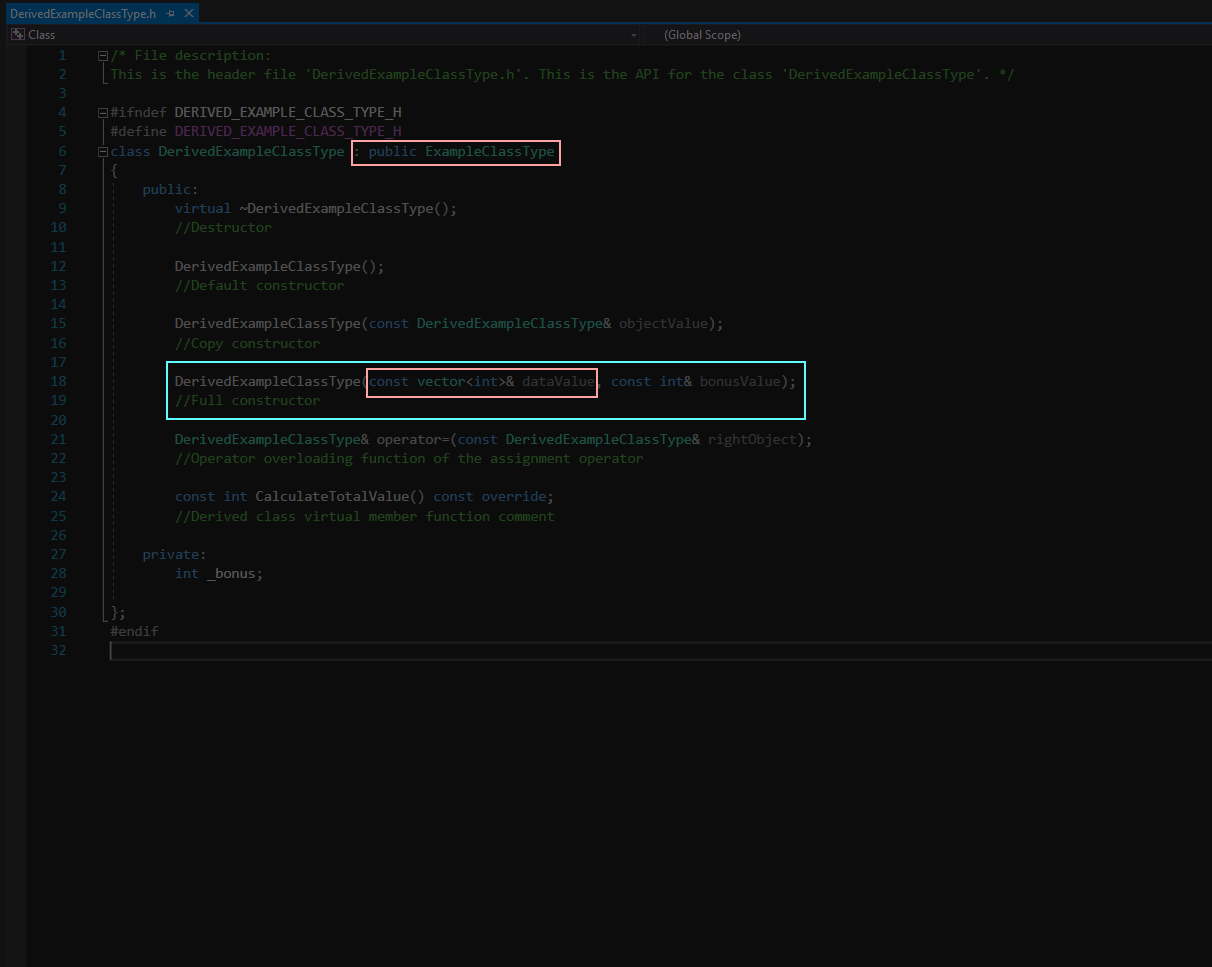


image end

## FULL CONSTRUCTOR

image



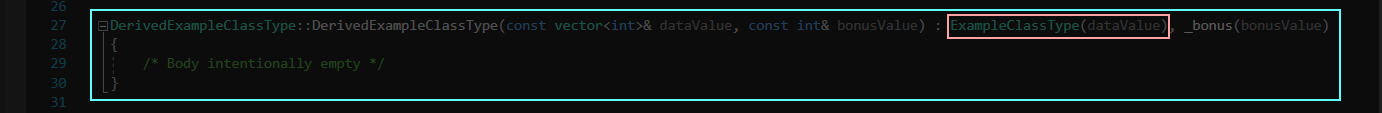
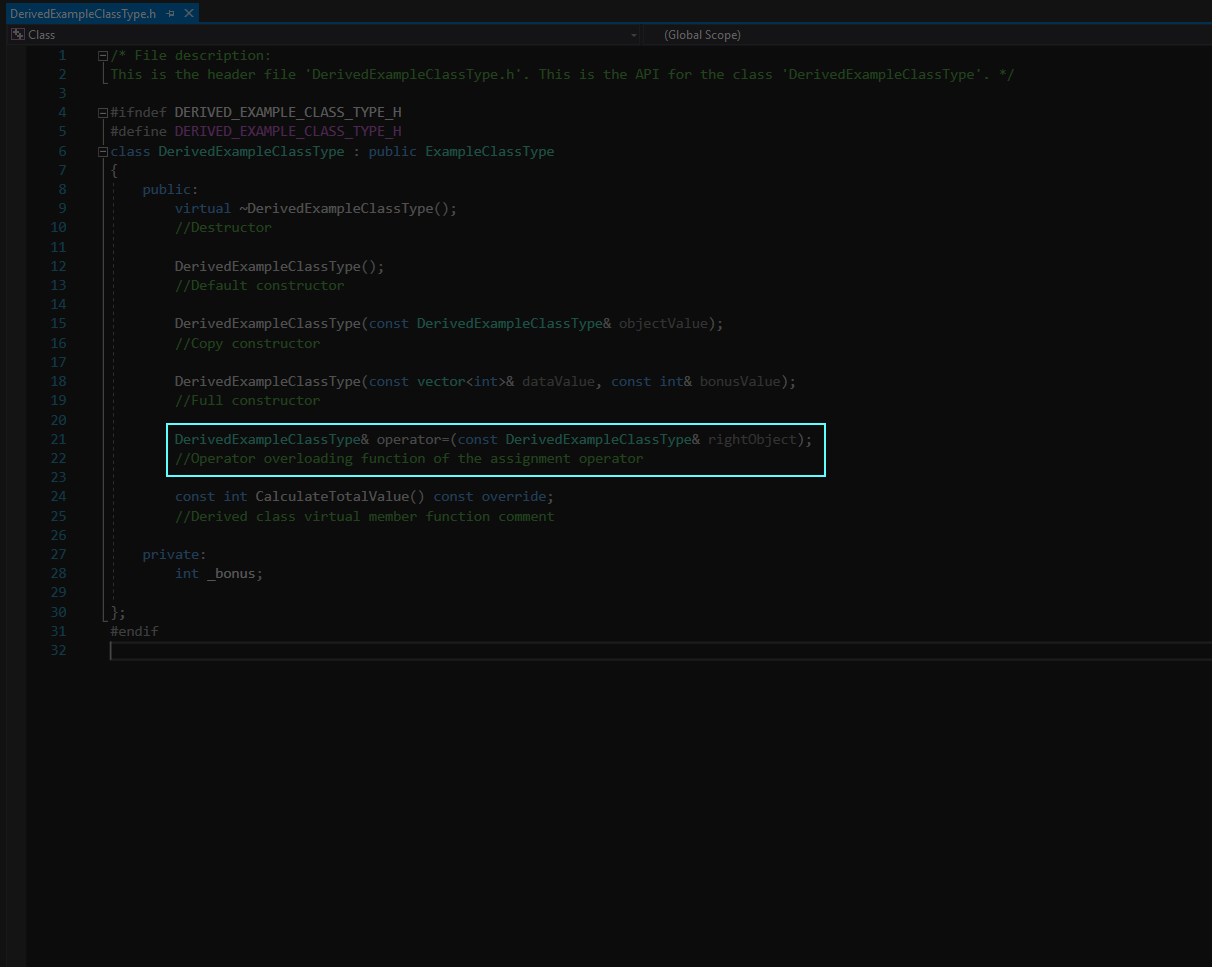


image end

## OPERATOR OVERLOADING FUNCTION OF THE ASSIGNMENT OPERATOR

image



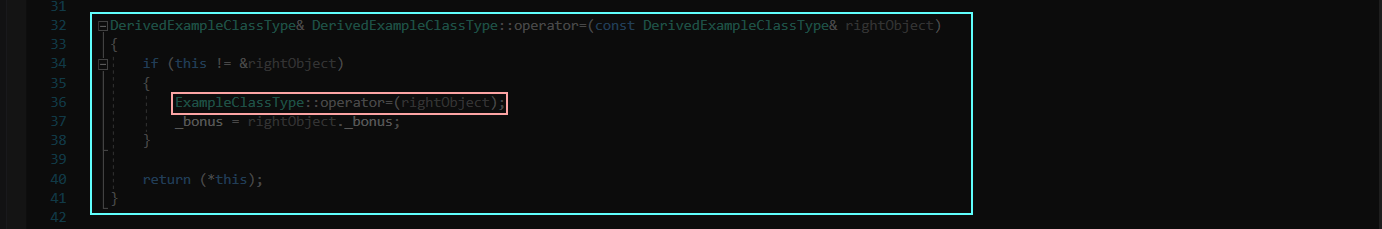


image end

# 12

A source code file including the header file of a derived class must also include the header file of the base class

# 13

VIRTUAL FUNCTION

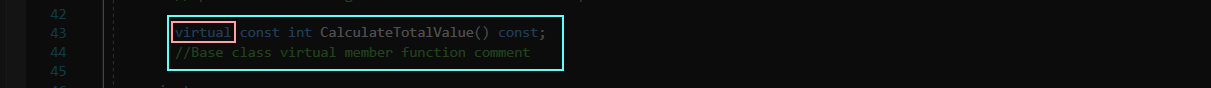
Consider the uniformity among classes (of a same category) concept. Define a base class that represents the category; i.e. it is the base class for all the classes mentioned

Virtual function must be base class’s member function

Virtual function declaration and definition

## BASE CLASS

image



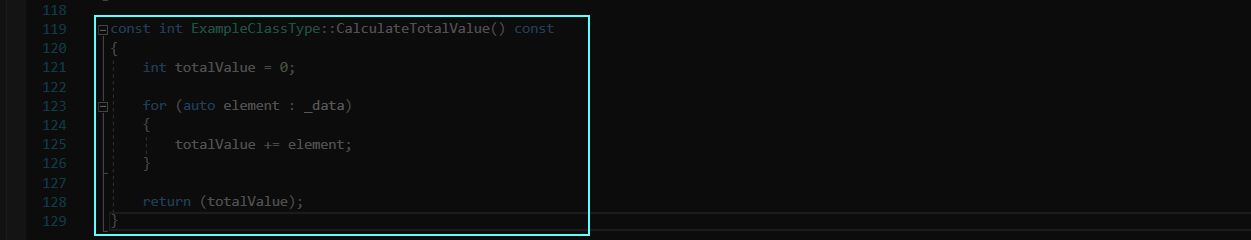
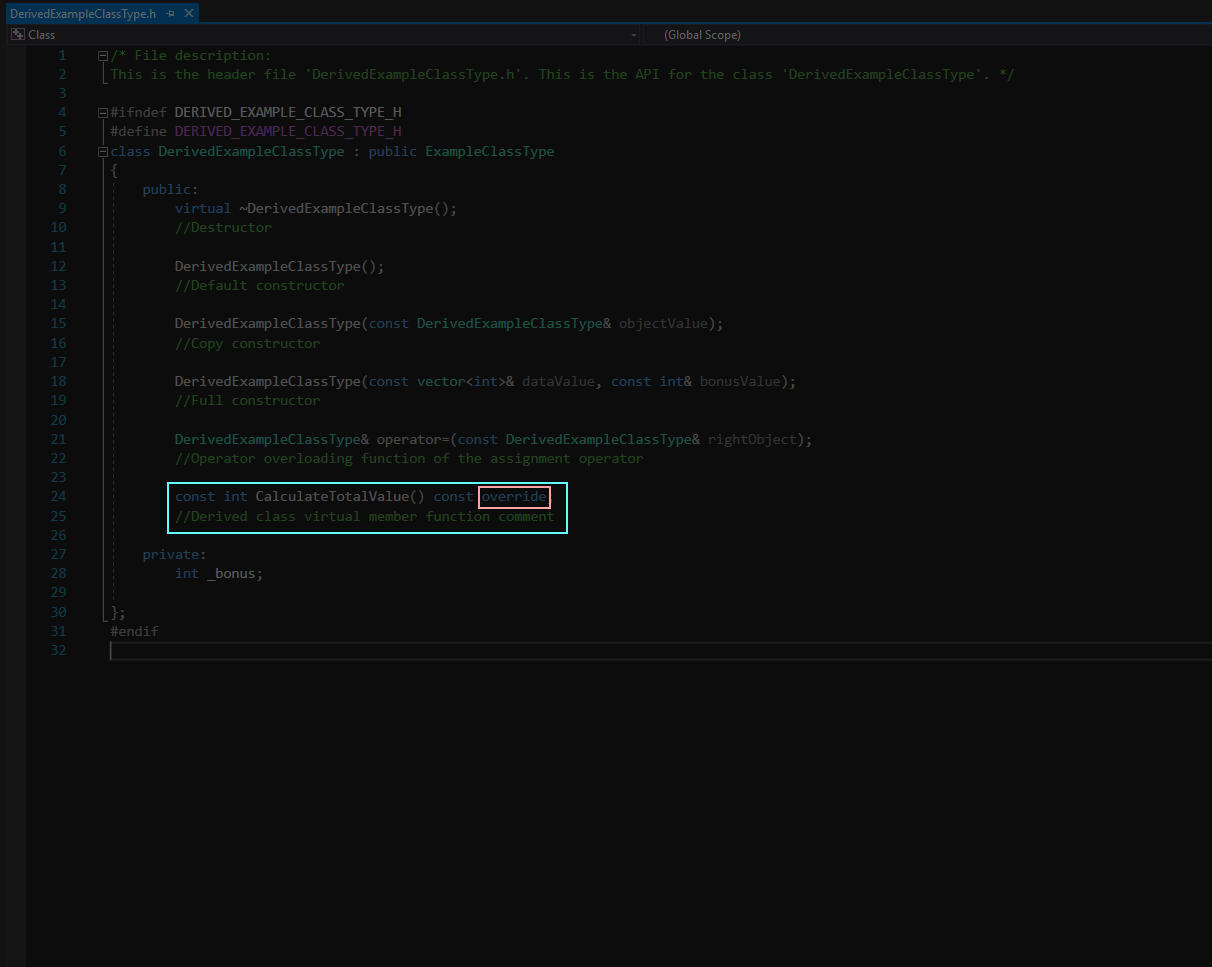


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## DERIVED CLASS

image



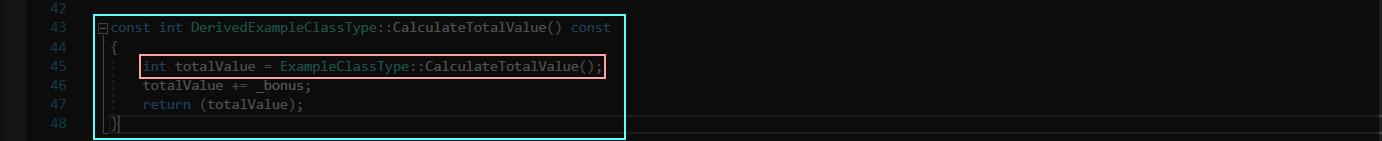


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