```
1   /*
2   ------------------------------------------------------------------------------
3   Laboratory  : labo_01
4   File        : rectangle.h
5   Author(s)   : Emmanuelle Comte et David Gallay
6   Date        : 20.02.2020
7
8   Purpose     : Declare class Rectangle and functions useful for it
9   Remark(s)   :
10
11                   There is the github repository:
12                   https://github.com/dgheig/Ba2-labo01
13
14  Compiler    : MinGW-g++ 6.3.0 and g++ 7.4.0
15  ------------------------------------------------------------------------------*/
16  #ifndef RECTANGLE_H
17  #define RECTANGLE_H
18
19  #include <iostream>
20  #include "color.h"
21
22  class Rectangle {
23
24      public:
25          /**
26           * @brief Create a rectangle with a width, a height and a color, a width and
27           *        a height, a width or with nothing
28           * @param width  default value 0
29           * @param height default value 0
30           * @param color  default value Color()
31           */
32          Rectangle(double width = 0, double height = 0, const Color& color = Color());
33
34          /**
35           * @brief Create a rectangle with an object color
36           * @param color
37           */
38          Rectangle(const Color& color);
39
40          /**
41           * @brief Create a rectangle with a color code (enum)
42           * @param code
43           */
44          Rectangle(Color::Code code);
45
46          /**
47           * @brief  Get the height of the rectangle
48           * @return The height of the rectangle
49           */
50          double getHeight() const;
51
52          /**
53           * @brief  Get the width of the rectangle
54           * @return The width of the rectangle
55           */
56          double getWidth() const;
57
58          /**
59           * @brief  Calculate the surface of the rectangle
60           * @return The surface f the rectangle
61           */
62          double getSurface() const;
63
64          /**
65           * @brief  Get the color of the rectangle
66           * @return The color of the rectangle
67           */
68          Color getColor() const;
69
70          /**
71           * @brief  Change the height of the rectangle
```

```
 72              *  @param  height
 73              *  @return The rectangle
 74              */
 75             Rectangle& setHeight(double height);
 76
 77             /**
 78              *  @brief  Change the width of the rectangle
 79              *  @param  base
 80              *  @return The rectangle
 81              */
 82             Rectangle& setWidth(double width);
 83
 84             /**
 85              *  @brief  Change the color of the rectangle with an object color
 86              *  @param  color
 87              *  @return The rectangle
 88              */
 89             Rectangle& setColor(const Color& color);
 90
 91             /**
 92              *  @brief  Change the color of the rectangle with a color code (enum)
 93              *  @param  color
 94              *  @return The rectangle
 95              */
 96             Rectangle& setColor(Color::Code color);
 97
 98             /**
 99              *  @brief  Display a rectangle
100              *  @param  stream
101              *  @return The stream
102              */
103             std::ostream& display(std::ostream& stream = std::cout) const;
104
105         private:
106             double mWidth;
107             double mHeight;
108             Color  mColor;
109     };
110
111     /**
112      *  @brief  Overload of the output stream to display a rectangle
113      *  @param  stream
114      *  @param  rectangle
115      *  @return The stream
116      */
117     std::ostream& operator<<(std::ostream& stream, const Rectangle& rectangle);
118
119     #endif // RECTANGLE_H
120
```