```
1    #ifndef CIRCLE_H
2    #define CIRCLE_H
3
4    #include <iostream>
5    #include "color.h"
6
7    class Circle {
8
9        public:
10           /**
11            * @brief Create a circle with color and radius, a radius or with nothing
12            * @param radius default value 0
13            * @param color  default value Color()
14            */
15           Circle(double radius = 0, const Color& color = Color());
16
17           /**
18            * @brief Create a circle with an object color
19            * @param color
20            */
21           Circle(const Color& color);
22
23           /**
24            * @brief Create a circle with a color by a color code (enum)
25            * @param code
26            */
27           Circle(Color::Code code);
28
29           /**
30            * @brief  Change the radius of the circle
31            * @param  radius
32            * @return The circle
33            */
34           Circle& setRadius(double radius);
35
36           /**
37            * @brief  Change the color of the circle with an object color
38            * @param  color
39            * @return The circle
40            */
41           Circle& setColor(const Color& color);
42
43           /**
44            * @brief  Change the color of the circle with a color code (enum)
45            * @param  color
46            * @return The circle
47            */
48           Circle& setColor(Color::Code color);
49
50           /**
51            * @brief  Get the radius of the circle
52            * @return The radius of the circle
53            */
54           double getRadius() const;
55
56           /**
57            * @brief  Calculate the surface of the circle
58            * @return The surface of the circle
59            */
60           double getSurface() const;
61
62           /**
63            * @brief  Get the color of the circle
64            * @return The color of the circle
65            */
66           Color getColor() const;
67
68           /**
69            * @brief  Display a circle
70            * @param  stream  default valut cout
71            * @return The stream
```

```
72              */
73             std::ostream& display(std::ostream& stream = std::cout) const;
74
75     private:
76             double mRadius;
77             Color  mColor;
78
79  };
80
81  /**
82   * @brief  Overload of the output stream to display a circle
83   * @param  stream
84   * @param  circle
85   * @return The stream
86   */
87  std::ostream& operator<<(std::ostream& stream, const Circle& circle);
88
89  #endif // CIRCLE_H
90
```