

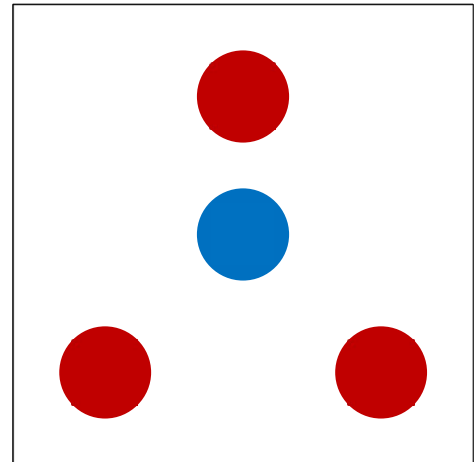
Programming Basics – live exercises

Class declaration and use

Task 1: Declaration of the `Circle` class

A drawing sheet measures 500 x 500, with the origin of the coordinates in the upper left corner of the drawing sheet.

- a) Declare a `Circle` class which represents circles that are drawn on this sheet.
- b) You should focus on the attributes of the circles. (We'll look at the behaviour later.) In principle, circles are characterised by a radius, an x coordinate and a y coordinate (together representing the centre point) as well as a colour. Declare all object variables of the `Circle` class.



Task 2: Using the `Circle` class

- a) Write an application for the `Circle` class in which a circle is created. Name the corresponding application class `MainSingleStandardCircle`, and within it declare a reference variable `circle1` that references the circle object created.
- b) Assign the following values to the object variables of the object created in task (a): radius (50), x coordinate (200), y coordinate (200) and colour (`Colour.MAGENTA`).
- c) Then call up the given method `draw()`.

Task 3: Constructors for the `Circle` class

- a) Write a **default constructor** for the `Circle` class which assigns the following standard (default) values to each newly-created object: radius (50), x coordinate (200), y coordinate (200) and colour (`Colour.MAGENTA`).
- b) Declare a **constructor with multiple parameters** for the `Circle` class. When calling up the constructor, **four values** should be passed, namely a specific radius value, an x coordinate value, a y coordinate value and a specific colour.

Task 4: Method for the `Circle` class

Write a `relocate` method for the `Circle` class, which moves a circle by changing the coordinates of the circle. This means that an integer value should be added to both the x coordinate and the y coordinate. Two integer values can be passed to the method, and it does not return any result.

Task 5: Setter and getter for the `Circle` class

Write the appropriate setter methods and getter methods for the two object variables `Radius` and `Colour` of the `Circle` class.