OOP Lab Problem practice
(23 September 2024)

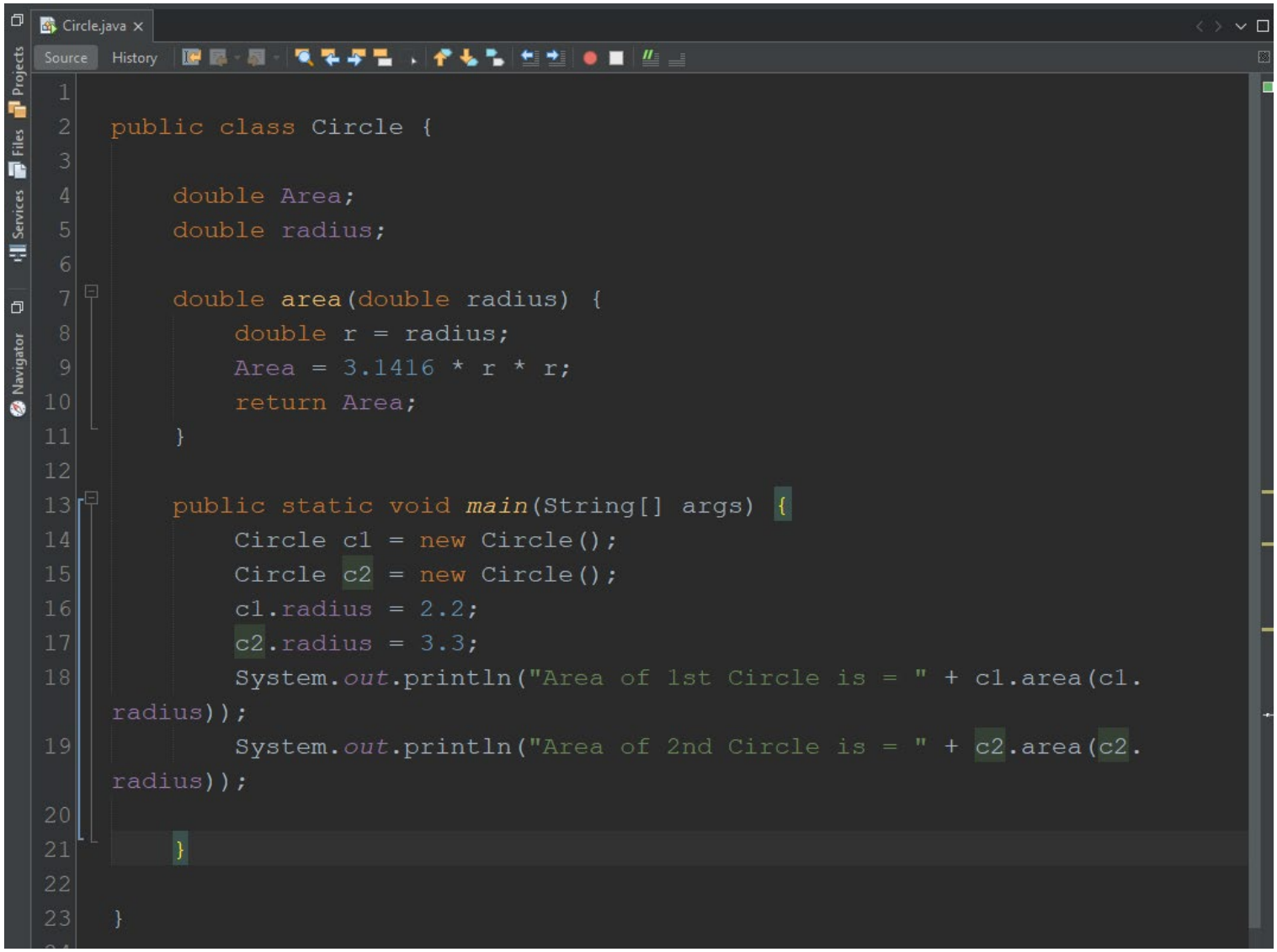
Name: Gaus Saraf Murady
ID: 0432410005101088
Section: 2B2

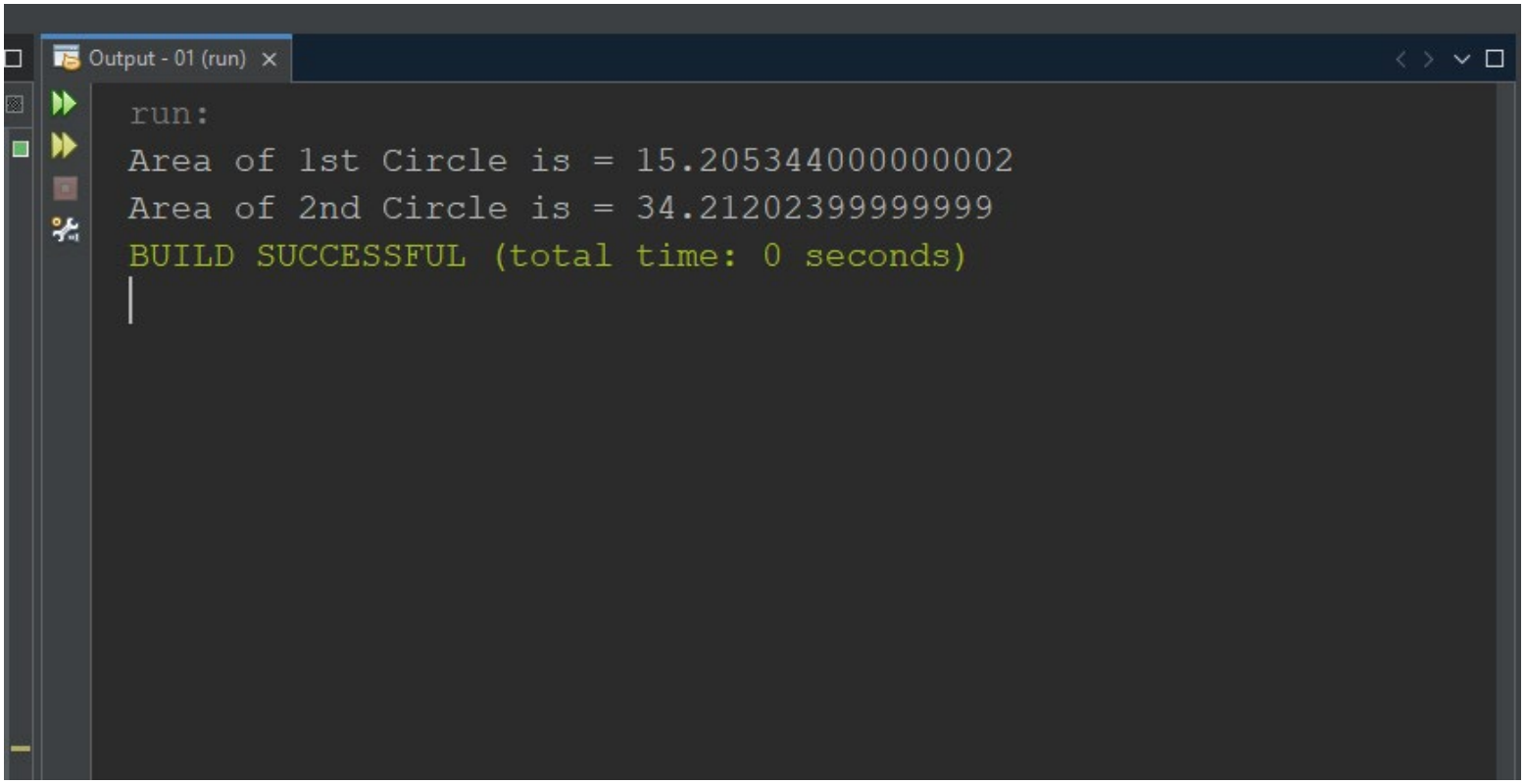
Problem 1: Create a class named Circle. It has one variable called radius and a function named area which returns the area of a circle.
Now create two different objects of Circle class, assign value of radius of each object and then calculate area of them.

Problem 2: Implement the problem 1, where you set radius value using constructor.

Problem 3: Add a method or function of Circle class named perimeter which returns the perimeter of circle. Also, create a class containing constructor to set radius value. Now create three new objects and calculate their area and perimeter

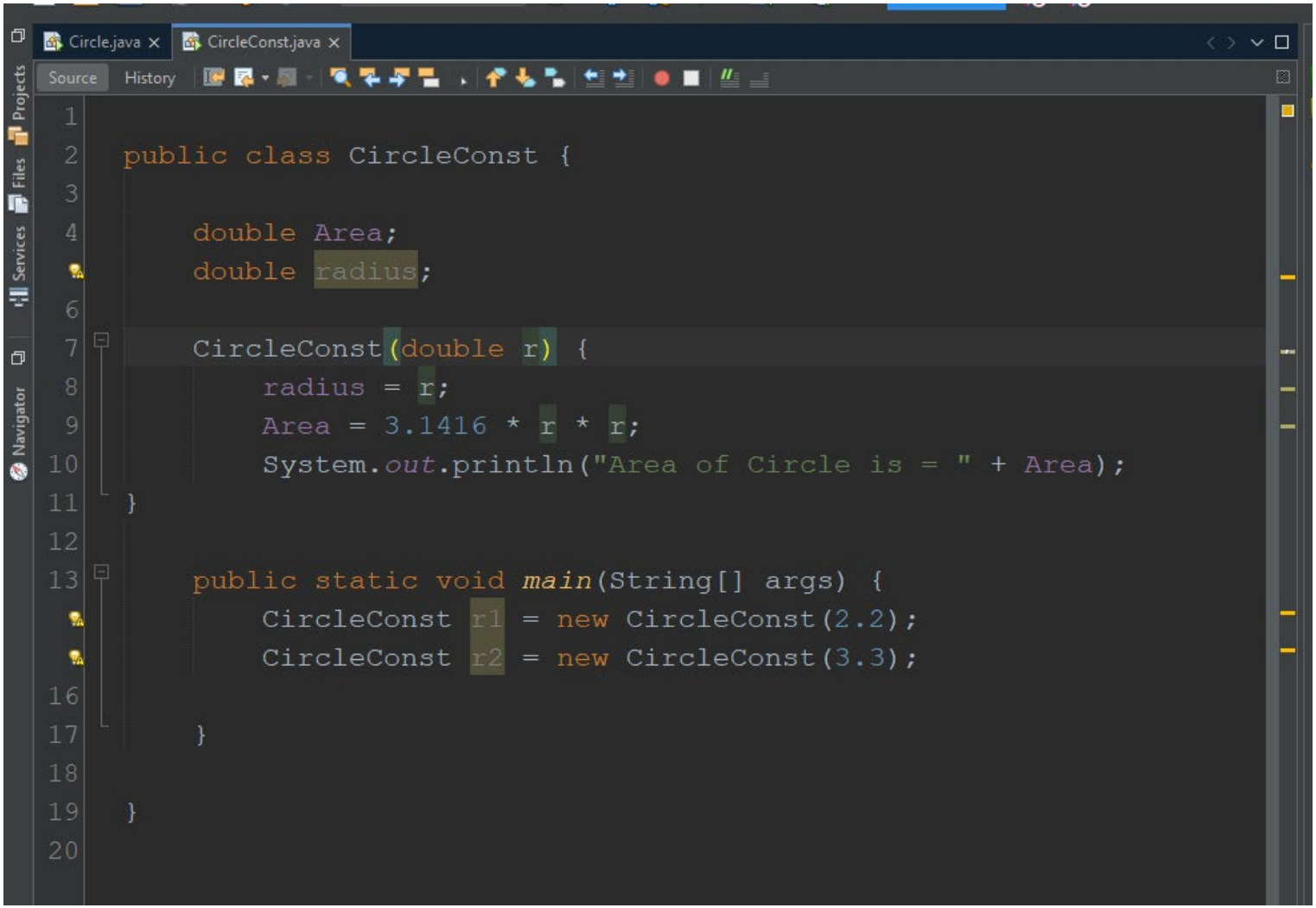
Problem 1 Task: Create a class named Circle. It has one variable called radius and a function named area which returns the area of a circle. Now create two different objects of Circle class, assign value of radius of each object and then calculate area of them.

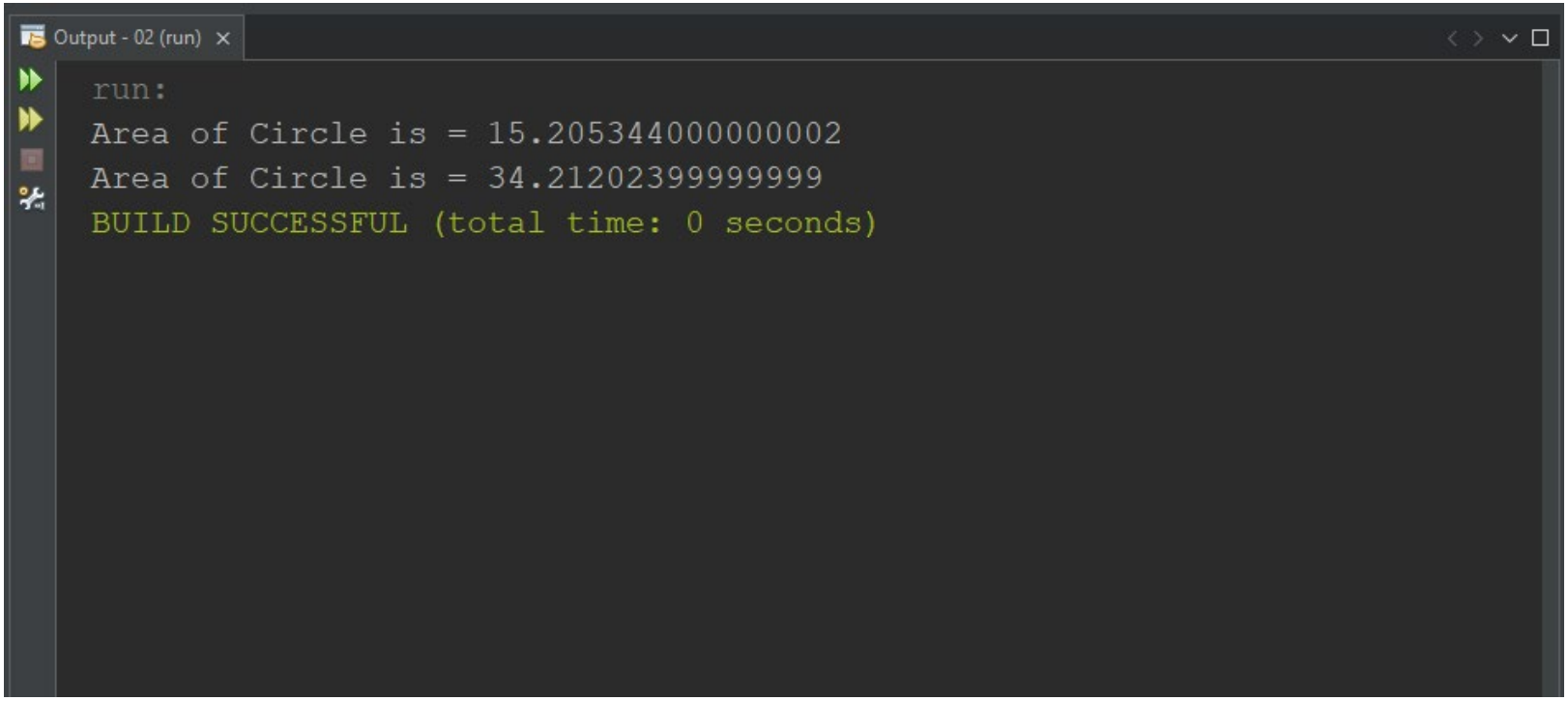




Conclusion: We created the class Circle and the instructed variables and a method that receives the radius of a circle returns the area of a circle. Then 2 objects are created that has a pre-defined values for radii. Using the method the areas of circles from the 2 objects are calculated and printed using the print syntax.

Problem 2 Task:
Implement the problem 1, where you set radius value using constructor.





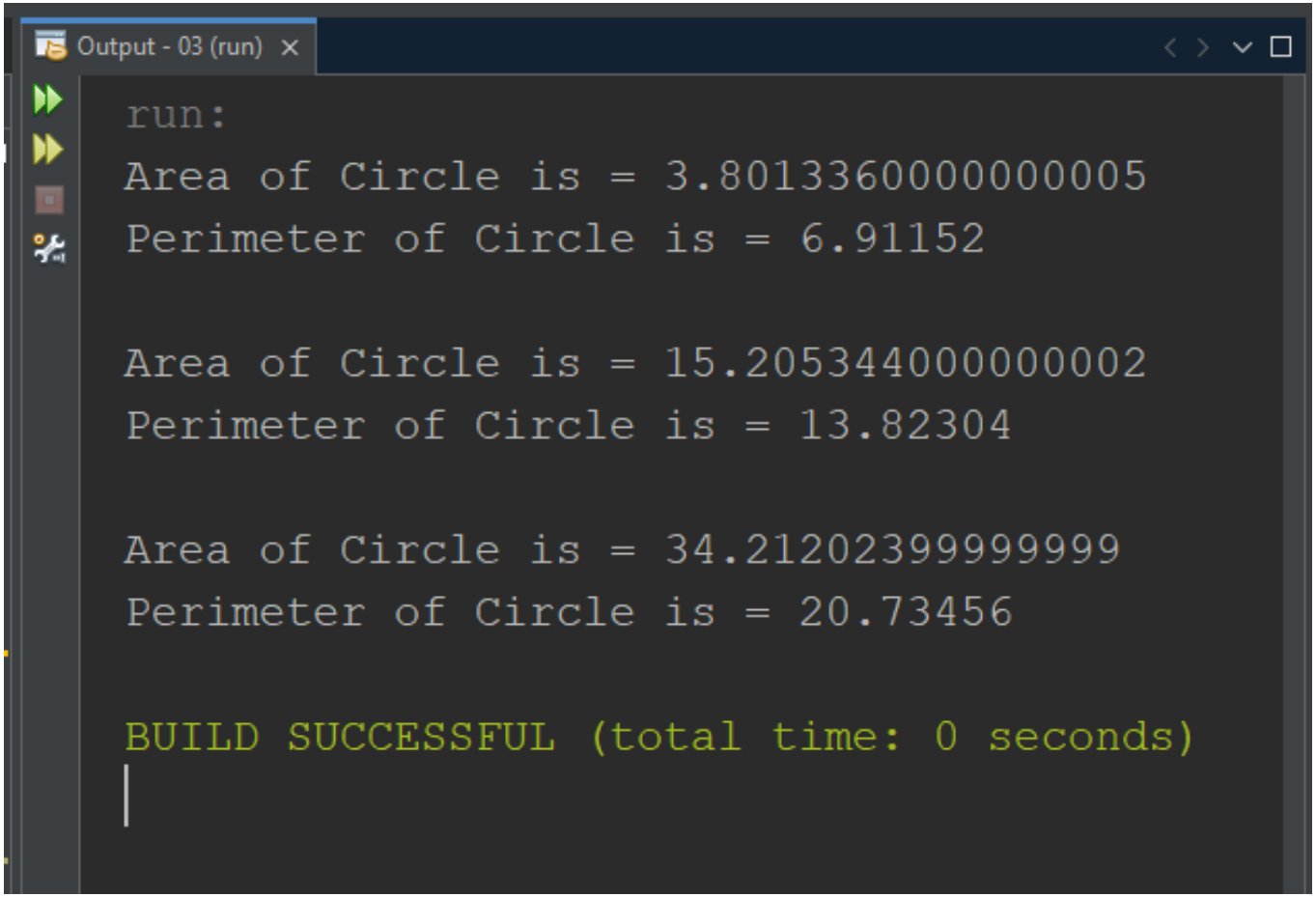
Conclusion: We re-wrote the previous problem using only constructors which are called whenever objects are created. So, when an object is created, the value for radius is passed as arguments to a parameterized constructor. In there, it sets the radius value and calculates the area of the circle and assigns the result to a variable Area. Then it prints the values using the print syntax.

Problem 3 Task: Add a method or function of Circle class named perimeter which returns the perimeter of circle. Also, create a class containing constructor to set radius value. Now create three new objects and calculate their area and perimeter

Circle.java ×

Source History

```
1
2  class Circle {
3
4      double radius;
5      double perimeter;
6
7      Circle(double r) {
8          radius = r;
9          System.out.println("Area of Circle is = " + 3.1416 * r * r);
           System.out.println("Perimeter of Circle is = " + perimeter
(radius) + "\n");
11     }
12
13     double perimeter(double r) {
14         perimeter = 2 * 3.1416 * r;
15         return perimeter;
16     }
17
18     public static void main(String[] args) {
           Circle c1 = new Circle(1.1);
           Circle c2 = new Circle(2.2);
           Circle c3 = new Circle(3.3);
22     }
```



Conclusion: a method named Perimeter was created which receives the radius values and returns the value of perimeter of a circle after calculating. Before this, a constructor was created which sets the value of radius when an object is created, and the constructor is called using parameters. Lastly, for 3 objects, the area is calculated and printed and the method Perimeter called which returns the value of perimeter of a circle which then is also printed using the print syntax.