

**Sofia University**  
**Department of Mathematics and Informatics**

**Course :** **AOOP part 1**

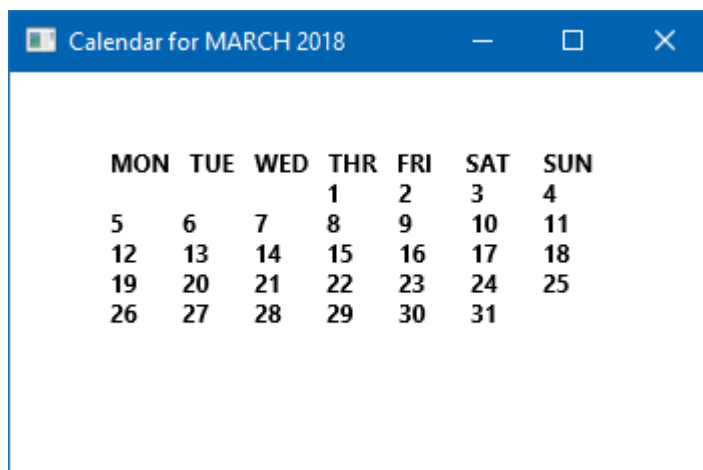
**Date:** March 2, 2025

**Student Name:**

**Homework No. 2**

**Problem No. 1**

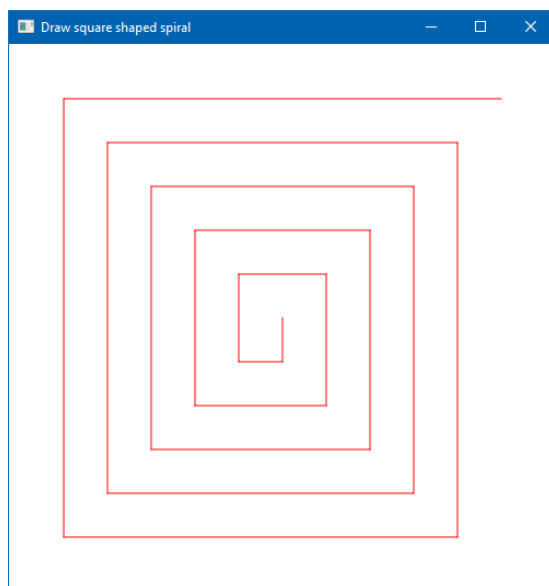
Write a JavaFX program that displays a calendar for a month. The program reads the number of the month and the year using a dialog input textbox in JavaFX. Display in Red color the date number, if it is the current date number at the time of displaying the Calendar.



Submit the solution as a **IntelliJ project**.

**Problem No. 2**

Write a JavaFX application to reproduce the following drawing. Submit the solution as an **IntelliJ project**



### **Problem No. 3**

Write a `static` method `drawRandomNumber()` in a class to generate random integers from within `[1;3]` with the following probabilities:

$$P(1) = 0.2$$

$$P(2) = 0.3$$

$$P(3) = 0.5$$

where  $P(N)$  denotes the probability for the number  $N$ .

Test the method in the `main()` method of the class.

Call the method `drawRandomNumber()` in a loop 10,000 times and display the probability with which the method has returned 1,2 and 3. Display the probabilities as percentages using the methods of class `NumberFormat`.,

Call the method `drawRandomNumber()` in a loop 60,000 times and display the probability with which the method has returned 1,2 and 3. Display the probabilities as percentages using the methods of class `NumberFormat`.,