Write a Java program and name it LabExam.java and create three separate methods to solve any three of the five problems provided. The main method asks which method the user wants to run by taking an integer input. When it is 1, it will call the first method, when 2, call the second method and so on. If an integer is taken from the console that you didn’t implement, it should print, “I didn’t implement this problem.”

1. Write a java method that prints inverted triangle pattern based on an input from the console. For an input of **5** the following output will be printed-

**1 2 3 4 5**

**1 2 3 4**

**1 2 3**

**1 2**

**1**

1. Write a java method that takes an integer input from the console and prints all the numbers that are divisible by 7 up to that number.

**Input:**

Enter an integer: 30

**Output:**

Numbers divisible by 7 up to 30:

7

14

21

28

1. Write a method that prompts the user to enter an integer to determine the size of an array. Then, take input from the console to assign values to the array indices. Then provide a target integer input from the console and check if that specific element is in the array or not. If the element is there in the array, the method should return a string “Found!” otherwise “Not found!”

**Input:**

Enter the size of the array: 5

Enter the elements of the array:

1 3 5 17 19

Enter the target element to search: 5

**Output:**

Found!

1. Write a method that reads a text file named *word.txt* and identifies how many lines are there in the text file. (Do not hard code as it will lead to a score of 0).

**Input (from the file):**

Hello

World

This

Is

A

Test

File

**Output:**

The number of lines in the file is: 7

1. Create a Java class called **Book** with attributes for title, author, and ISBN. Include a constructor to initialize these attributes with three parameters. Implement a method, **toString()**, to print the book details. Demonstrate this functionality in the **main** method which resides in the client class by creating a **Book** object using the constructor, setting values, and printing the book information.

**Input:**

Enter the title of the book: The Great Gatsby

Enter the author of the book: F. Scott Fitzgerald

Enter the ISBN of the book: 978-3-16-148410-0

**Output:**

Book Information:

Title: The Great Gatsby

Author: F. Scott Fitzgerald

ISBN: 978-3-16-148410-0