Lab 08

**Rules:**

* Always create a separate Java file for each program you write in the lab (e.g., problem1.java, problem2.java, etc.)
* Do not forget to take your work with you when you leave the lab by either copying your work files to your own USB flash disk, or by e-mailing them to yourselves.

1. Write a Java program that does the following:
2. Create a Java file with the name **problem1.java**.
3. Prompts the user for an integer in the range from 2 to 5, validating the input until the user enters an integer from the range.
4. Print the first 10 powers of the entered integer.

Sample run of the program:

Enter a number between 2 and 5: 2

2 4 8 16 32 64 128 256 512 1024

1. Write a Java program that does the following:
2. Create a Java file with the name **problem2.java**.
3. Prompt the user to enter a positive integer n, validating the input until the user enters a positive integer.
4. Print the sequence of numbers from 1 to n but print negative values for even numbers.

Sample run of the program:

Enter a positive integer: –4

Invalid input!

Enter a positive integer: 7

1 –2 3 –4 5 –6 7.

1. Write a Java program that does the following:
2. Create a Java file with the name **problem3.java**.
3. Prompt the user to enter a positive integer n, validating the input until the user enters a positive integer.
4. The program then prompts the user to enter n more integers.
5. Print how many of the n integers were odd.

Sample run of the program:

Enter a positive integer: –2

Invalid input!

Enter a positive integer: 4

Now enter 4 more integers:

6

7

8

9

2 were odd.

Sample run of the program:

Enter a positive integer: 5

Now enter 5 more integers:

1

3

5

7

9

5 were odd.

1. Write a Java program that does the following:
2. Create a Java file with the name **problem4.java**.
3. Prompt the user to enter a large integer n.
4. Then, prompt the user to enter a value smaller than the previous value entered.
5. The program terminates either after the user enters the fourth smallest value, or if the user enters a value not smaller than the previous value.
6. If the program terminates because the current entered value is not smaller than the previous one, then print **Goodbye**.

Sample run of the program:

Type a large integer n: 100

Type a smaller value of n: 20

Type a smaller value of n: 10

Type a smaller value of n: 2

Type a smaller value of n: 1

Sample run of the program:

Type a big integer n: 100

Type a smaller value of n: 0

Type a smaller value of n: 0

Goodbye

1. Write a Java program that does the following:
2. Create a Java file with the name **problem5.java**.
3. Prompt the user for an odd positive integer n, validating the input until the user enters an odd positive integer.
4. Print an n x n grid displaying a backwards Z shape with the following properties:
5. A diagonal row of X's running from the top left corner to the bottom right corner.
6. With the exception of the X from the diagonal, a row of O's in the top row and bottom row.

Sample run of the program:

Enter value for n: 5

XOOOO

X

X

X

OOOOX

Lab Work Submission:

* You can continue to work on this lab after our lab class, on your own, at home.
* Submit your lab work via Blackboard on or before: **Wednesday, September 27, 2023, 11:59pm**.
* The only accepted submission method!
* Once you submit your assignment you will not be able to resubmit it!
* Make absolutely sure the Java files you want to submit are the Java files you want graded.
* You will not be able to submit your lab work under any circumstances once **Lab08** disappears at **12:00 a.m.** on **Thursday, September 28, 2023**.
* There will be **NO** exceptions to these rules!
* To submit your lab work, upload the 5 Java files (**with .java extension**) you did for this lab to the **Lab08** assignment in the **Labs** tab in your Lab section’s presence in Blackboard.
* Then, make sure you click the **Submit** button to submit your lab work.