PA - 303.5.1 - Practice Assignment - Loops

Objective:

In this assignment, you will create a Java program. Requirements are given below. This assignment will test your knowledge of Control Flow (Conditional) Statements and loops in Java.

Tasks:

1: Print a Multiplication Table

Write a program that uses nested **for loops** to print a multiplication table.

1	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16	18	20	22	24
3	6	9	12	15	18	21	24	27	30	33	36
4	8	12	16	20	24	28	32	36	40	44	48
5	10	15	20	25	30	35	40	45	50	55	60
6	12	18	24	30	36	42	48	54	60	66	72
7	14	21	28	35	42	49	56	63	70	77	84
8	16	24	32	40	48	56	64	72	80	88	96
9	18	27	36	45	54	63	72	81	90	99	108
10	20	30	40	50	60	70	80	90	100	110	120
11	22	33	44	55	66	77	88	99	110	121	132
12	24	36	48	60	72	84	96	108	120	132	144

2: Find the Greatest Common Divisor

❖ Write a program that prompts the user to enter two positive integers, and find their greatest common divisor (GCD).

❖ Examples:

➢ Enter 2 and 4. The gcd is 2.

➢ Enter 16 and 24. The gcd is 8.

❖ How do you find the gcd?

➢ Name the two input integers *n1* and *n2*.

➢ You know number 1 is a common divisor, but it may not be the gcd.

➢ Check whether k (for k = 2, 3, 4, and so on) is a common divisor for n1 and n2, until k is greater than n1 or n2.

3: Predict Future Tuition

❑ Suppose the tuition for a university is $10,000 for the current year and increases by 7 percent every year.

❑ In how many years will the tuition be doubled?

Year	Tuition
0	$10,000
1	tuition = 1.07 * tuition
...	tuition = 1.07 * tuition
...	tuition = 1.07 * tuition
...	...
?	$20,000 or more

Submission Instructions:

Include the following deliverables in your submission -

- ○ Submit your source code using the Start Assignment button in the top-right corner of the assignment page in Canvas.