ACS-1904 W2023
Lab #10
Due by **Friday, March 22** at 11:59 pm

- Submit your .javafile via Nexus.
- Include your name and student number in each file as a comment.

Create a driver file named `Lab10.java` and include 2 static methods `findSum()`and `gcd()`

Find Sum

`findSum(int n)` is a recursive method. The method should find the sum of every value that is less than or equal to `n`. For example, `findSum(3)` should return 6, because 3 + 2 + 1 = 6.

Sample output for `findSum()`

```
Enter a number >= 1.
15
The sum is: 120
```

GCD

The greatest common divisor (gcd) of two positive integers is the largest integer that divides evenly into both. For example, gcd(3933, 63) = 9.

The greatest common divisor of two positive integers, *x* and *y*, is as follows:

If *y* divides *x* evenly, then gcd(*x*, *y*) = *y*
Otherwise, gcd(*x*, *y*) = gcd(*y*, remainder of *x*/*y*)

Write a static method named `gcd()` that accepts 2 integers > 0 and ***recursively*** determines the greatest common divisor. Get the two ints from the keyboard in the main method.

Sample output for `gcd()`

```
Calculating the GCD.
Enter two numbers > 0.
765 1665

the gcd of 765 and 1665 is 45
```

Demonstrate the 2 methods in main. Test them with a variety of input values to verify that they both work correctly for any valid input.

Submit your Java file (Lab10.java)via Nexus.

Extra work: Do not submit this work.

Do this work on a copy of your Lab10.java class. i.e. don’t do this in the code you will submit.

In both of the recursive methods bad user input could result in unchecked exceptions being thrown, crashing your program. Make your program bulletproof using any of the validation or exception-handling techniques covered in 1904.