**Lab 1 - Exercises**

# 1. Right shift operator in java:

What is the result of the operation ​**-1 >>> 63**​ ? What about​ ​ ​**-1 >> 63**​?

# 2. Bitwise operations in java:

Given two integers​ op1 and​​ op2, what is the result of​ **op1 & op2, op1 | op2, op1 ^ op2, ~op2.**

Print the result in binary, decimal, and hexadecimal format

**3.** Write a method that can print an integer in the binary format

(You should not use any method from ​**Integer** class)​

# 4. Primitive values and cast operator in java:

Given a ​**byte b1 = (byte) 127;** what is the binary representation of ​ ​**b1**

***Hint: you can use the below statement***

**String s1 = String.format("%8s", Integer.toBinaryString(b1 & 0xFF)).replace(' ', '0');**

What about ​**byte b1 = (byte) 128;** what is the binary representation of ​ ​**b1**

1. Complete the implementation of ​**Primes** class from the lab​

1. Print the first 10 ​**Fibonacci numbers** in class using iterations​

The ​**Fibonacci sequence** starts with two numbers 1 and 1 and the ​ ​subsequent number is the sum of the previous two. Example: 1, 1, 2, 3, 5, 8, 13, 21, 34

F​0=1​ , F​1=1​ and F​n = F​ ​n-1 + F​ ​n-2

1. Print the first 10 ​**Fibonacci numbers** in class using recursive calls​

1. Calculate the greatest common divisor of two integer using recursion.

The greatest common divisor (​**gcd**​) of two integers, which are not all zero, is the

largest positive integer that divides each of the integers.

Solution: Euclid’s algorithm **gcd(a, 0) = a**

**gcd(a, b) = gcd(b, a mod b)**

@ Jordan Anastasiade