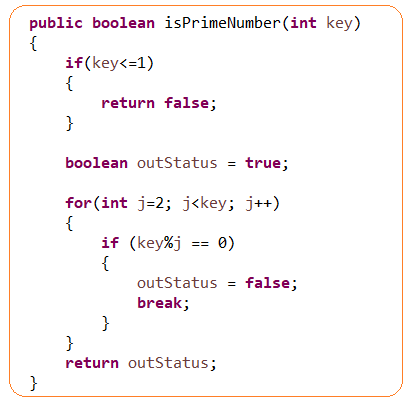
# **MATH**

# **PRIME NUMBER**

**Prime numbe**r is a number that has two dividers - one and itself. Prime numbers starts from 2

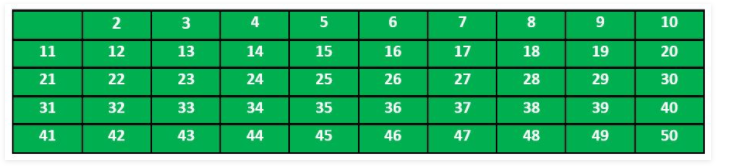
Example: 2, 3, 5, 7, 11



# **SIEVE OF ERATOSTHENES**

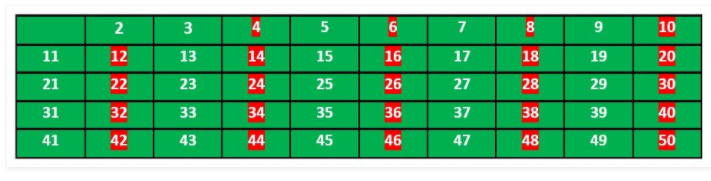
SIEVE OF ERATOSTHENES – the ancient method of finding prime numbers

1. We generate a range of numbers what we want to checks



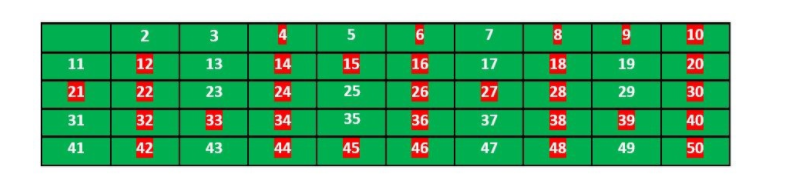
1. Divide all numbers by 2. Those which are not dividable (n%2 != 0) will leave as not touchable

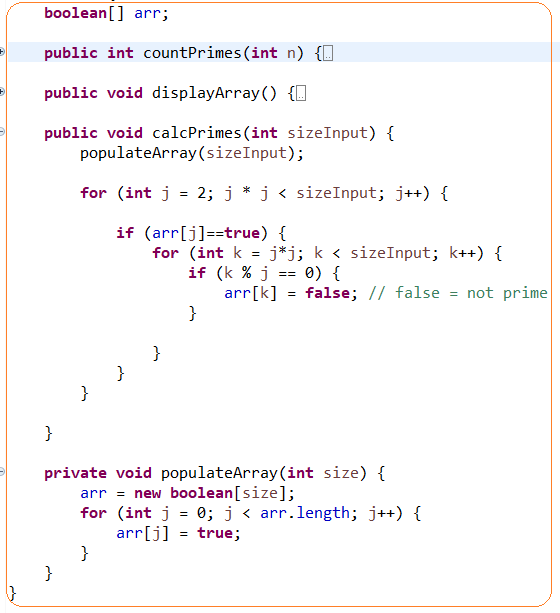
2\*2=4, 2\*3=6, 2=8, 2\*5=10, 2\*6=12



1. Repeat the same for 3

3\*3=6, 3\*4=12, 3\*5=15, 3\*6=18

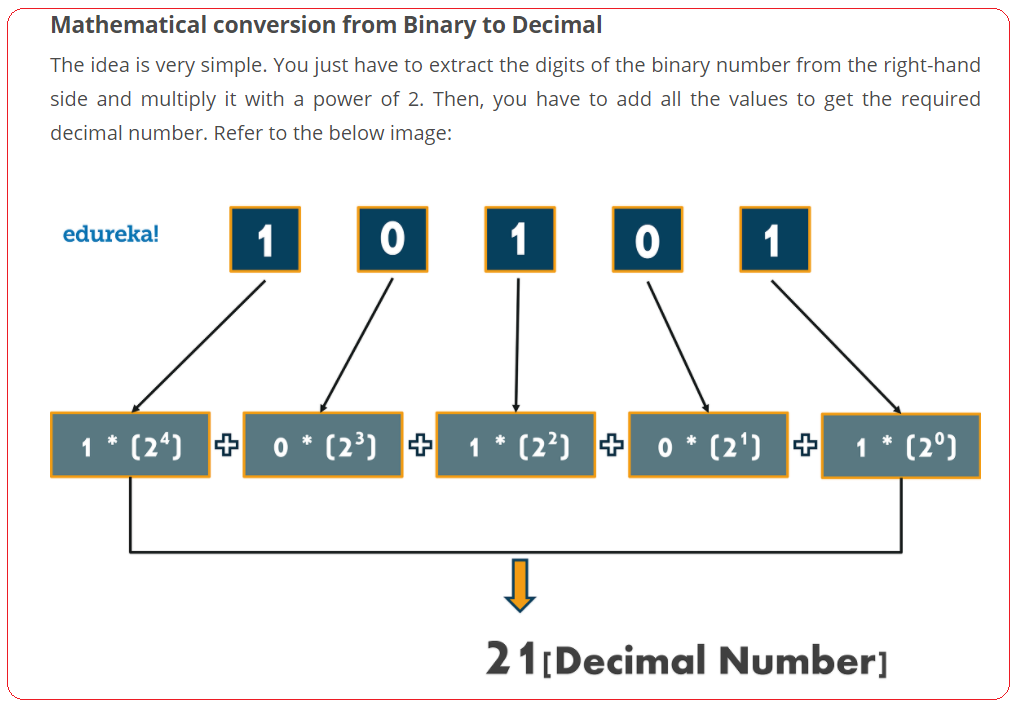


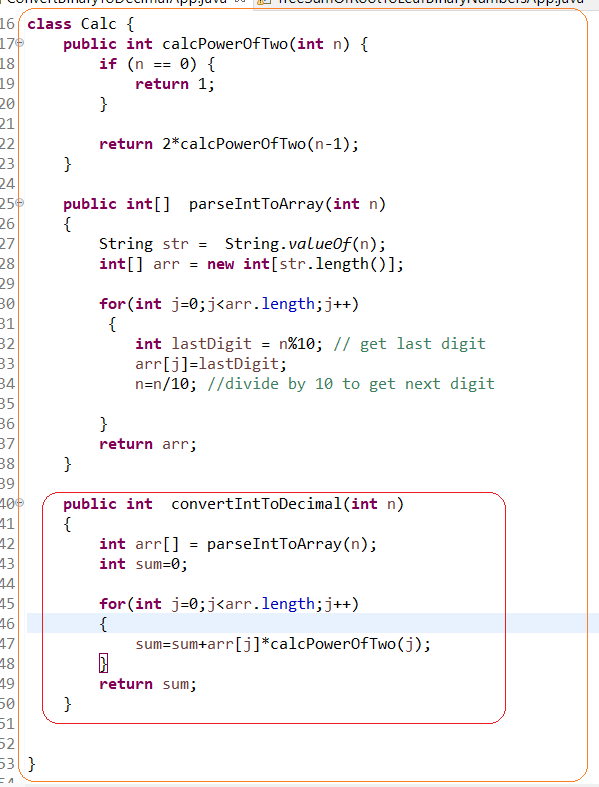


# **CONVERT\_BINARY\_TO\_DECIMAL**

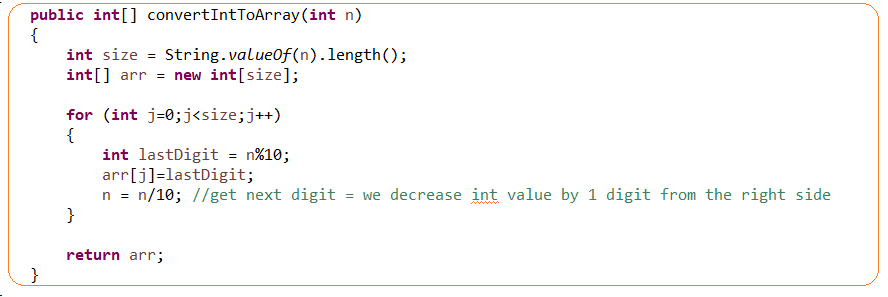
**Binary number**: A binary number is a number expressed in the base-2 numeral system or binary numeral system. This system uses only two symbols: typically 1 (one) and 0 (zero).

**Decimal number:** The decimal numeral system is the standard system for denoting integer and non-integer numbers. It is also called base-ten positional numeral system.





# **CONVERT INTEGER TO ARRAY OF INTEGERS**



## **CATALAN NUMBER**

<https://coldfunction.com/mgen/p/3r>

**Catalan number** is a sequence of numbers that can be calculated by formula. It is used in many problems. One of them is count all possible unique binary trees

