Laboratory 2: *a study on methods to obtain the greatest common divisor*

The program runs on iterations of 10 tests for greatest common divisor with 3 different algorithms and prints their times. The tests are performed with randomly generated big numbers. The tests are performed with numbers ranging from 1 digit to 40 digits.

**getStamp** – gets a timestamp (in milliseconds); Is used to time greatest common divisor functions

**generateInfInt** – generates a random big number with the given number of digits

**gcdEuclidianDivisionBIG** – computes greatest common divisor via Euclidian division on big numbers

**gcdExtendedEuclidianBIG** – computes greatest common divisor via Extended Euclidian division on big numbers

**gcdBinaryBIG** – computes greatest common divisor via the Binary method on big numbers

**runExtendedEuclidian** – runs the extended Euclidian algorithm for the given of runs and with randomly generated numbers of a given number of digits

**runEuclidDivision** – runs the extended Euclidian algorithm for the given of runs and with randomly generated numbers of a given number of digits

**runBinary** – runs the extended Euclidian algorithm for the given of runs and with randomly generated numbers of a given number of digits

**bigNumberComparison** - starts the computation of greatest common divisors for a given number of runs with big numbers of a given number of digits

Below is a graph portraying the results of running the algorithm: