

CS202 HW1:

1. Written Assignment: Complete Exercises 0.1, 0.2, and 0.3 from the textbook. Submit your solutions as a PDF file.

2. Coding Assignment: Given two integers a and b (not both zero, with $0 \leq a, b \leq 10^{12}$), implement two different algorithms to compute their greatest common divisor (GCD). One implementation must use the Euclidean Algorithm introduced in class. Use the provided template file, and be mindful of Java's integer limits.

For each algorithm:

- Analyze its running time and express it using big-O notation.
- Test the implementations on inputs of varying sizes and compare their observed performance with the theoretical analysis.

Submit your work as two files:

- GCD.java (source code)
- A PDF file containing your analysis