**Lab 3: Factorization and DLP**

In this lab, you will be asked to solve two problems: large number factorization and discrete logarithm problem. Both problems are known to be computationally difficult but the lab problems are in a manageable scale.

Everybody has two problems. Solve either one of the two problem will get you 80% of score for this lab. Solve both will win 100%.

In the factorization problem, the number given to you is the product of two prime numbers. Both prime numbers are in the range [0xFFFFFFFF, 0x1FFFFFFFF].

In the DLP, you will be given three numbers, a, b, and n. Your mission is to find x such that ax = b mod n.

In the lab report, you need to explain in detail how to solve the problem and paste your source code. Otherwise you won’t get score.