CSE108 – Computer Programming Laboratory
(Spring 2021)
Lab #4

April 2, 2021.

Hand-in Policy: Via Teams. No late submissions will be accepted. File name that you submit should be as following: *StudentNo.c*
Collaboration Policy: No collaboration is permitted.
Grading: This lab will be graded on the scale of 100.

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1. **void russian_multiplication (unsigned int* multiplicand, unsigned int* multiplier)**: Write a function that multiplies two numbers using the Russian Peasant Multiplication Algorithm and returns the result in parameter multiplicand. The second parameter should return the latest multiplier calculated by the algorithm. Your function should return 5402 for multiplicand 37 and multiplier 146 and print the following for the example in the given table:

<div align="center">

37 * 146 = 74 + 592 + 4736 = 5402
Multiplier = 1

</div>

Note: The latest value of the multiplicand and the multiplier should only be printed in main().

Multiplicand	Multiplier	Is current multiplier is odd?
37	146	146 mod 2 = 0 => Ignore
74	73	**73 mod 2 = 1 => +74**
148	36	36 mod 2 = 0 => Ignore
296	18	18 mod 2 = 0 => Ignore
592	9	**9 mod 2 = 1 => +592**
1184	4	4 mod 2 = 0 => Ignore
2368	2	2 mod 2 = 0 => Ignore
4736	1	Ignore

2. **void multiply_polynomials (double* a3, double* a2, double* a1, double* a0, double* b3, double* b2, double* b1, double b0)**: Write a function that multiplies two 3rd degree polynomials given by (a3, a2, a1, a0) and (b3, b2, b1, b0) and obtains a 6th-degree polynomial with given by (a3, a2, a1, a0, b3, b2, b1). You have to print the result in main().
Note: Remember that product of two 3rd degree polynomial can have at most 7 terms.