

Computer Programming, Lecture 1 Homework

Section B, Monsoon 2020, IIIT-H
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January 16th

1. Write a program to copy an integer array to another array by in reverse order.
2. Write a program to reverse an integer array iteratively and recursively.
3. Write a program to find the roots of a polynomial using Newton-Raphson method.

January 17th

1. Write a program to convert a string so that upper case letters will be turned to lower case and vice-versa. Any letter not from the alphabet, you should leave them as they are.
2. Write a program to compute the value of a polynomial using Horner's method.
3. Write a program to print all subsets of $S_n = \{1, \dots, n\}$.

January 18th

1. Write a program to compute the GCD of two positive integers m and n .
2. Compute the GCD of two numbers using Euclid's algorithm.
3. Write a program to find the roots of a polynomial using *bisection method*. You may check wiki to understand the *bisection method*.

January 19th

1. Write a program to compute the number of small case letters, capital case letters and letters which does not belong to the english alphabet in an input text read from the keyboard. **Bonus:** You can read the text from a file whose name is given as a command line argument.
2. Write a program to compute the product of two matrices.
3. Write a program to compute solution to a system of n linear equations in n unknowns using Gaussian-Elimination method. You can assume that the system has an unique solution.

January 20th

1. Write a program to computer the LCM of two integers.
2. Write a program to sort an array of integers using Merge Sort algorithm.
3. Write a program to compute solution to a system of n linear equations in n unknowns using Jacobi and Gauss-Seidel iterative methods. You can assume that the system has an unique solution. Check <https://www3.nd.edu/~z xu2/acms40390F12/Lec-7.3.pdf>