East West University

Department of Computer Science and Engineering

Course: CSE246 Algorithm Topic: Number theory Lab: 03

1. GCD: Given two numbers a and b, the task is to find the GCD of the two numbers using Euclid’s algorithm.

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| Sample input | Sample output |
| a = 20  b = 28 | 4 |

1. Prime factor: Given a number n, write an efficient function to print all prime factors of n. For example, if the input number is 12, then the output should be “2 2 3”. And if the input number is 315, then the output should be “3 3 5 7”.

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| Sample input | Sample output |
| 315 | 3 3 5 7 |

1. Sieve method: Given a number n, print all primes smaller than or equal to n using sieve method. It is also given that n is a small number.

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| Sample input | Sample output |
| 10 | 2 3 5 7 |

1. Highest occurring digit: Given a range L to R, the task is to find the highest occurring digit in prime numbers lie between L and R (both inclusive). If multiple digits have the same highest frequency print the largest of them. If no prime number occurs between L and R, output -1.

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| Sample input | Sample output |
| L = 1  R = 20 | 1 |