VIT
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

CBS1009-Computational Statistics **FALL SEMESTER 2023-2024**

LAB ASSIGNMENT-1

Problem 1 (a)

Find all the powers of M up to M^{n-1}, each modulo n.

Example

As M=2, N=11 find all powers of 2^{10} i.e. 2^{10} mod 11 and generate the corresponding sequence.

Problem 1 (b)

Find the primitive root for the Q. No 1 and store the results in two files. (Pr.txt and npr.txt)

Problem 2

You are given three integers: A, N, M. you write the number A appended to itself N times in a row. Let's call the resulting big number X. For example, if A = 120, N = 3, then X will be 120120120. Find out the value of X modulo M.

Example

As A = 12, N = 2, M=17 then X = 1212, 1212 modulo 17 = 5

Problem 3

Write a program to print the multiplication table for numbers between 1 and n (n should be a number entered by the user and it should be between 2 and 10). Use \t to insert a tab space between values. Here is a sample run:

Enter a number between 2 and 10: 4

1 2 3 4

2 4 6 8

3 6 9 12

4 8 12 16

Problem 4

Write a python program to find a given number is PDS or not. PDS is a number which is Divisible by the sum and product of their digits.

E.g., 144 is PDS, because 1+4+4=9 and 1*4*4=16, and 9*16=144

Problem 5

Write a program that accepts a sequence of words that are hyphen separated as input and prints the word in hyphens- separated sequence after sorting them alphabetically.

Input: Red-yellow-black

Output: Black – red-yellow