DEPARTMENT OF INFORMATION TECHNOLOGY

Design & Analysis of Algorithms (IT38007)

LAB ASSIGNMENT – 6

Date: 09/09/2024

Given an array p[ ] which represents the chain of matrices such that the i th matrix A_i is of dimension p[i-1] * p[i]. Write a function MatrixChainOrder() that returns the minimum number of multiplications needed to multiply the chain. Write a program for implementing matrix chain multiplication using dynamic programming approach.
E.g. p[ ] = (3,6,8,2) {This means there are three matrices A_1, A_2, A_3 with respective order of matrices (3,6), (6,8), (8,2)}

Possible order of chain

multiplications (A_1,(A_2, A_3))

((A_1, A_2)(A_3))

Etc….

Your program should find the optimal order of matrix chain multiplication that returns minimum number of multiplications.