

## Assignment – 6

Let we have  $n$  matrices  $A_1, A_2, \dots, A_n$ . The size of matrix  $A_i$  is  $p_{i-1} \times p_i$ . The size of the matrices is stored in an array  $p[0, 1, \dots, n]$  of size  $n + 1$ . The size of matrix  $A_i$  is  $p_{i-1} \times p_i$  which is basically  $p[i - 1] \times p[i]$  when accessing the size from the array. Perform the following –

- Implement the brute force recursive algorithm to find the minimum cost to multiply matrices  $A_1 \dots A_n$ . In your code, count the total number of sub-problems. Also, count how many times you are solving each sub-problem.
- Implement the recursive algorithm (which stores the solution to each sub-problem) to find the minimum cost to multiply matrices  $A_1 \dots A_n$ . In your code, count the total number of sub-problems. Also, count how many times you are solving each sub-problem.
- Implement the iterative approach to find the minimum cost to multiply matrices  $A_1 \dots A_n$ .