# California State University, Fresno

# DEPARTMENT OF COMPUTER SCIENCE

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| Class: | **Algorithms & Data Structures** | | | Semester: | **Fall 2021** |
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| Laboratory number: | **Lab 9** | | |
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**1. Statement of Objectives**

This lab will be about dynamic programming and brainstorming question. We will be implementing a program that gives us the best possible order of multiplying matrices so that the number of operations is optimal. We will print the number of the multiplications needed and the order of multiplication of matrix.

**2. Experimental Procedure**

For every row and column of matrix, we loop it through others to check the best possible solution. It is a brute force solution. Three for loops are nested inside one another. For higher inputs of data, it could take forever to calculate. Then we have introduced parabrac function that takes care of assigning parentheses to cout. Input will be given and can be changed in int main function. We have tried two different examples.

**3. Analysis**

A screenshot of a computer

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A screenshot of a computer

Description automatically generated

**4. Encountered Problems**

The execution time for some of the examples takes was an issue, since they were not able to execute in small amount of time.

**5. Conclusions**

This is an algorithm with Time complexity with order of O(N2). Only useable in cases of small inputs of data.

**6. References**

List the references used in this report.