Here is the coding assignment

You are expected to make the best possible and optimized solution

You are expected to submit the final answers by 2 o’clock today

The response should be in a Word document(filename should be your name) and must be uploaded to this chat before the deadline

Multiply Strings

Given two non-negative integers num1 and num2 represented as strings, return the product of num1 and num2, also represented as a string.

**Note:** You must not use any built-in BigInteger library or convert the inputs to integer directly.

**Constraints:**

* 1 <= num1.length, num2.length <= 200
* num1 and num2 consist of digits only.
* Both num1 and num2 do not contain any leading zero, except the number 0 itself.

**Example 1:**

**Input:** num1 = "2", num2 = "3"

**Output:** "6"

**Example 2:**

**Input:** num1 = "123", num2 = "456"

**Output:** "56088"

**Solution:**

#include <iostream>

using namespace std;

// Converting a String to Integer

int convertToInt(string s) {

    int num = 0;

    for (int i = 0; i < s.length(); i++) {

        num = num \* 10 + (s[i] - 48); // s[i] - 48 -> Converting a single character to integer

    }

    return num;

}

int multiply(string s1, string s2) {

    return convertToInt(s1) \* convertToInt(s2);

}

//Validation to check range of String

bool rangeValidation1(string num1, string num2) {

    return 1 <= num2.length() && num2.length() <= 200 && 1 <= num1.length() && num1.length() <= 200;

}

bool isNumaric(string s) {

    for (int i = 0; i < s.size(); i++) {

        if ((s[i] >= '0' && s[i] <= '9') == false) {

            return false;

        }

    }

    return true;

}

// validation to check string with leading zero

bool leadingZeroVvalidation(string num) {

    return (num[0] == '0' && num.length() > 1) ? false : true;

}

int main() {

    string num1 = "1";

    string num2 = "10";

    if (rangeValidation1(num1, num2)) {

        if (isNumaric(num1) && isNumaric(num2)) {

            if (leadingZeroVvalidation(num1) && leadingZeroVvalidation(num2)) {

                cout << num1 << " x " << num2 << " = " << multiply(num1, num2);

            } else {

                cout << "Invalid Input..! -> Number with leading 0";

            }

        } else {

            cout << "Invalid Input..! Entered String Does'nt contains all digits.'";

        }

    } else {

        cout << "Invalid Inputs..! Range Error";

    }

    return 0;

}