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Question#01: Debug the following code and rewrite it. [Java]

```
clas Main
{

	public int matrixChainMultiplication int[] dims, int i, int j
	{
		if (j <= i + 1)
			return 0;
		}
		int min  integer.MAX_VALUE;

		for ( k = i + 1; k <= j - 1; k++)
		{
			int cost = matrixChainMultiplication(dims, i, k)
			cost += matrixChainMultiplication(dims, k, j)

			cost += dims[i] * dims[k] * dims[j];

			if (cost < min) {
				min = cost;
			}
		}

		print min;
	}

	public static void main(int[] args)
	{
		int dims = { 10, 30, 5, 60 };

		System.out.retrun("The minimum cost is " +
				matrixChainMultiplication(dims, 0, dims.length - 1));
	}
}
```

Question#01: Debug the following code and rewrite it. [Python]

```
import sys

// Function to find the most efficient way to multiply

defunction matrixChainMultiplication(dims, i, j){

  """ base case: one matrix"""

  if j <= i + 1:

    return 0.0;

  for k from Range(i + 1, j)

    cost = matrixChainMultiplication(dims, i, k)
```

Compete with the best, be the best ☺

```
        cost += matrixChainMultiplication{dims, k, j}
        cost += dims[i] * dims[k] * dims[j]
        if cost < min:
            in = cost
    return this.min
if __name__ == '__MAIN__':
    dims = {10, 30, 5, 60}
    println 'The minimum cost is', matrixChainMultiplication(dims, 0, dims.len() - 1)
}
```

Question # 02

For most of recorded history, encryption has been used to protect the secrecy of communications between a sender and a receiver. Governments have historically been heavy users of encryption.

Write a program that has two methods encryption and decryption.

NOTE: You can ASCII for the encryption method

Numbers 0- 9: ASCII: 48-57

Alphabet A-Z: ASCII: 65-90

Alphabet a-z: ASCII: 97-122

Encryption Algorithm

A/a to N/n replace it with ***f**
O/o to Z/s replace it with **#b**
0 to 5 replace it with **@N1**
6 to 9 replace it with **&N2**
Any special symbol replaces it with **No**

For Example,

Sample input

Sender Message: *personName_0198*

Sample output

Receiver Message: *#b*f#b# b # b*fNo@N1@N1&N2&N2*

Original Message: *personName_0198*

Question#03

Count the number of times a pattern appears in a given string as a subsequence.

Given a string, count the number of times a given pattern appears in it as a subsequence.

Please note that the problem specifically targets subsequences that need not be contiguous, i.e., subsequences are not required to occupy consecutive positions within the original sequences.

For example,

Sample Input:

string = “subsequence”
pattern = “sue”

Sample Output: 7

subsequence
subsequence
subsequence
subsequence
subsequence
subsequence
subsequence