Roman Numbers To Integers Strings

String is a sequence of characters stored in an array and terminated by a null character.

Program for roman numbers to integer string conversion.

Algorithm:

Step 1: Initialize a variable total to store the result.
Step 2: Iterate through the roman numeral string.
for each character in the string, convert the roman numeral to its integer value.
Step 3: Check if the next numeral is larger than the current one number if yes - subtracting the current numeral from the next and add the result and to total.
If no - add the current numeral value to total.
Step 4: Once all characters are processed return the total integer value.

Program:

```
#include<stdio.h>
#include<string.h>

//Function to get the integer value of a roman numeral character.
int romanToInt (char c){
    switch (c){
        case 'I': return 1;
        case 'V': return 5;
```

```
        case 'X' : return 10;
        case 'L' : return 50;
        case 'C' : return 100;
        case 'D' : return 500;
        case 'M' : return 1000;
        default : return 0;
    }
}
// function to convert a roman numeral string to an integer.
int convertRomanToInt (char *s) {
    int total = 0;
    int length = strlen(s);
    for (int i=0; i<length; i++) {
        int current = romanToInt(s[i]);
        int next = (i+1 < length) ? romanToInt (s[i+1]) : 0;

        if (current < next) {
            total += (next - current);
            i++;
        } else {
            total += current;
        }
    }
    return total;
}
int main () {
    char roman[20];
    printf ("Enter a Roman numeral: ");
    scanf ("%s", roman);
    int result = convertRomanToInt (roman);
    printf ("Integer value: %d \n", result);
    return 0;
}
```

Input:-

Enter a Roman numeral : IX

Enter a Roman numeral: MCMXC

Output:-

Integer value: 9

Integer value : 1990.