

LEETCODE 1131

Roman to Integer

I = 1

V = 5

X = 10

L = 50

C = 100

D = 500

M = 1000

Input \rightarrow S = MCMXCIVStep 1 Iterate from $i=0$ to $s.length()$;Step 2 In each iteration,
 $char ch = s.charAt(i);$ Step 3

i	0	1	2	3	4	5	6
	M	C	M	X	C	I	V

IV $\rightarrow 5 - 1 = 4$ IX $= 10 - 1 = 9$ XL $= 50 - 10 = 40$ XC $= 100 - 10 = 90$ CD $= 500 - 100 = 400$ CM $= 1000 - 100 = 900$

Iteration	ch	ch_prev	value	result
i=0	M	X	(+) 1000	1000
i=1	C	M	(+100) 100	1100
i=2	M	C	(-100) (-100) = 200	1900 $\leftarrow (2100 - 200)$
i=3	X	M	+10	1910
i=4	C	X	(-10) (-10) = -20	1990 $= (1910 + 100 - 20)$
i=5	I	C	+1	1991 $\leftarrow (1990 + 1)$
i=6	V	I	(-1-1) -2	1994 $= (1991 + 5 - 2)$