

Integer to a Roman numeral

To solve this problem of converting an integer to a Roman numeral, you'll want to simulate the greedy strategy of repeatedly subtracting the largest possible Roman value from num.

[Key Insight:] Create a list of values and their Roman numeral equivalents, sorted from largest to smallest, including the subtractive forms:

Value:	1000	900	500	400	100	90	50	40	10	9	5	4	1
Symbol:	M	CM	D	CD	C	XC	L	XL	X	IX	V	IV	I

[Strategy (Greedy Algorithm):]

1. Start with the largest Roman value.
2. While $\text{num} \geq \text{value}$, subtract value from num and append its corresponding symbol to the result.
3. Move to the next smaller Roman value.
4. Repeat until $\text{num} = 0$.

[Example: num = 1994:]

step-by-step using the table:

- 1000 \rightarrow subtract once \rightarrow "M" \rightarrow num = 994
- 900 \rightarrow subtract once \rightarrow "CM" \rightarrow num = 94
- 90 \rightarrow subtract once \rightarrow "XC" \rightarrow num = 4
- 4 \rightarrow subtract once \rightarrow "IV" \rightarrow num = 0

final output: "MCMXCIV"

[Tip:] This approach avoids all complicated digit parsing (units/tens/etc). You don't need to split num into decimal places - the table handles it.

[Table implementation:] Start by building two arrays:

`int values[] = {...};`

`string symbols[] = {...};`

Then iterate through them with a loop using the greedy logic.