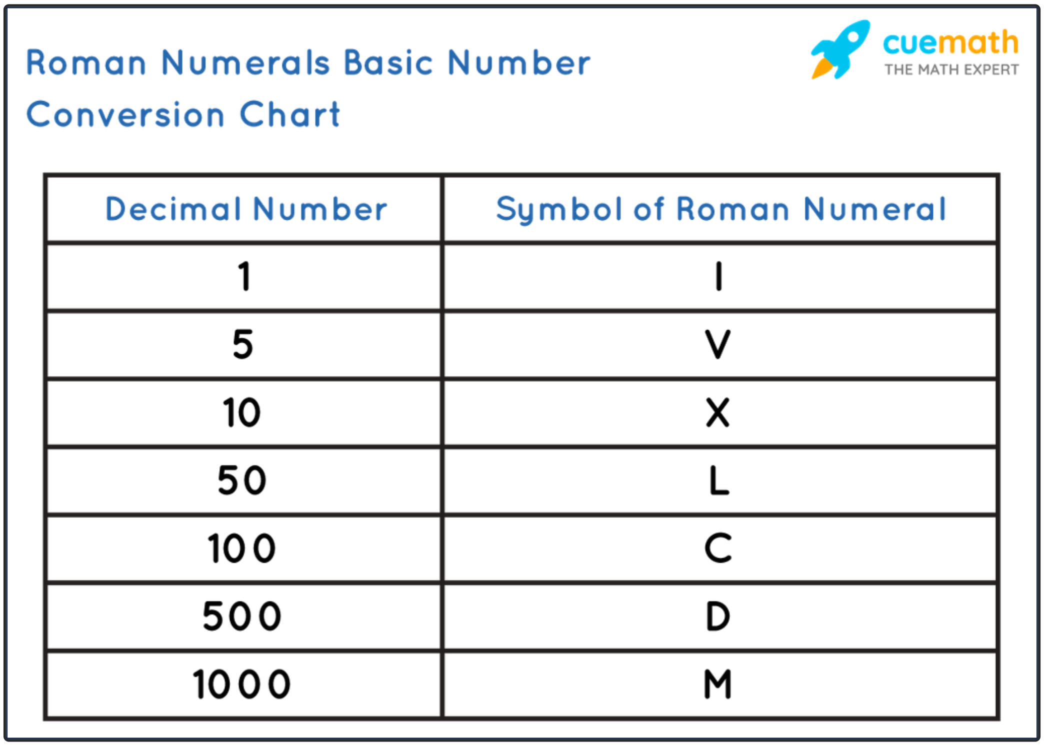
Scripting Lesson 4: HandsOn

Course	DevOps Engineering
Topic / Session number	Scripting / Lesson 4
Objectives / Goals	1. Hands On for Scripting Lesson 1/2 a. roman_numerals.sh b. count_vowels.sh

Objective 1: Hands On for Scripting Lesson 1/2

roman_numerals.sh

Write a shell script that converts given Roman Numeral to Decimal:



Roman Numerals Basic Number Conversion Chart

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Decimal Number	Symbol of Roman Numeral
1	I
5	V
10	X
50	L
100	C
500	D
1000	M

The script should take one argument (the roman numerals) and print its decimal value.

Contraints:

- For the sake of simplicity we can assume that all the inputs are valid.
- The smallest possible numerals is `I` (**1**) and the largest is `MMMCMXCIX` (**3999**).

Example outputs:

```
$ ./roman_numerals.sh MCMLXXXIV
1984
$ ./roman_numerals.sh MMXXV
2025
$ ./roman_numerals.sh MMMCMXCIX
3999
```

Algorithm:

- Iterate through the numerals backwards.
- Assign a value you will add based on the numeral you encounter:
  - M - 1000
  - D - 500
  - C - 100
  - L - 50
  - X - 10
  - V - 5
  - I - 1
- Always store the value of the previous numeral (you can initialize it as 0).
- If the previous value is greater than the current one, it means we need to subtract from the total. Some examples of such composites:
  - CM (1000 - 100 = **900**)
  - XL (50 - 10 = **40**)
  - IV (5 - 1 = **4**)

Hint:

It is better to check whether the previous value was larger than the current one, after you already mapped the current numeral to a decimal value.

count_vowels.sh

Write a shell script that counts the number of vowels (**a, e, i, o, u** - letters) in a given word.

`count_vowels.sh` should accept one argument. It should count vowels regardless of casing.

Example outputs:

```
$ ./count_vowels.sh "tentek"
2
$ ./count_vowels.sh "cat"
1
$ ./count_vowels.sh "TENtek"
2
$ ./count_vowels.sh "CAT"
1
```

Hint:

You could solve this using if statements but an easier approach would be using Regular Expressions (RegEx). You might have already encountered RegEx while using the `grep`, `sed` or `awk` commands.