Caesar Cipher Walkthrough

CSE 142 Assessment 3

Let's make a Cipher for "yep" with shift 3

Part 1 Make a word cipher by breaking the word down to each letter **(L)**

$$L_1, L_2, \ldots, L_n$$

ex: "**yep**" becomes y_1, e_2, p_3

Part 2 Make letter cipher for each letter by getting its index and applying a shift

Continued on following slides →

Progress

1 y
2 e
3 p

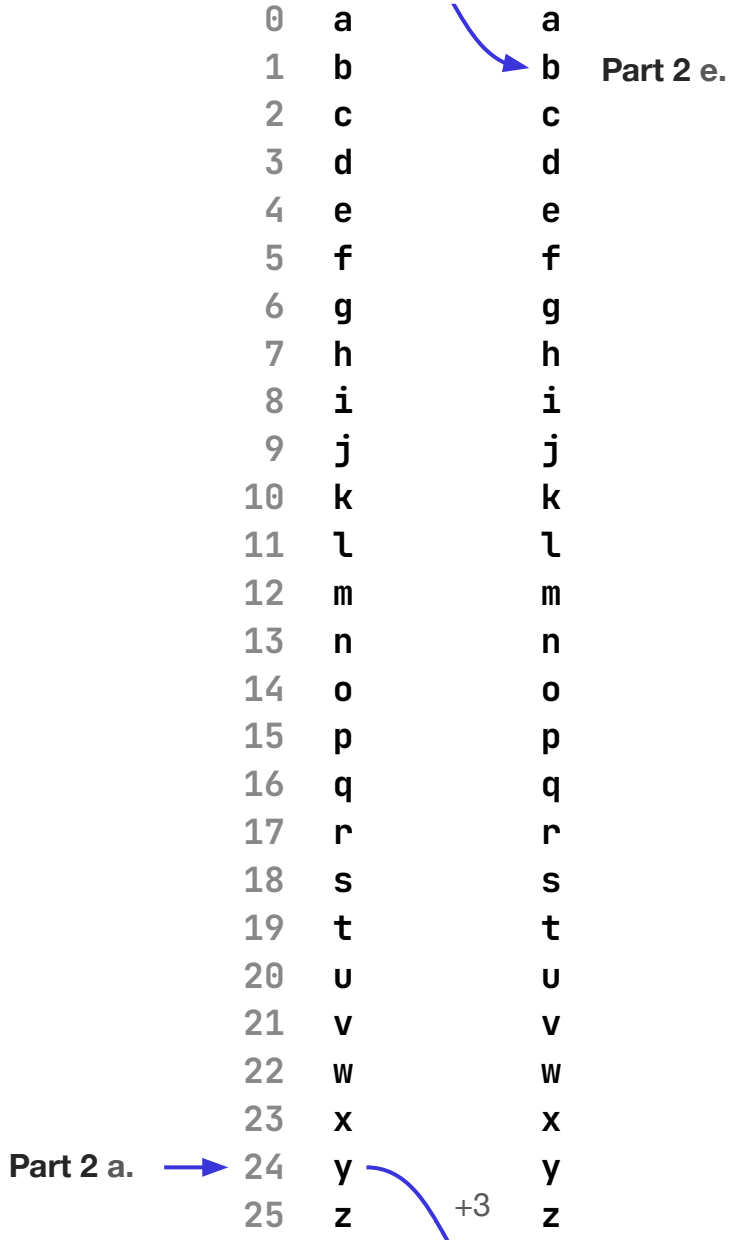
Let’s make a Cipher for “y” with shift 3

Part 2 Make letter cipher for each letter by getting its index and applying a shift

a. Begin with L_1 which is ‘**y**’
b. ‘**y**’ appears at index 24 in our numbered alphabet to the right
c. Add a shift of 3 to the index: 24+3=27
d. Wrap the alphabet as needed; since 27 is not in the alphabet, we wrap back: 27-25=2
e. The index of our cipher letter is 2, which is ‘**b**’

Progress

1	y	→ b
2	e	
3	p	



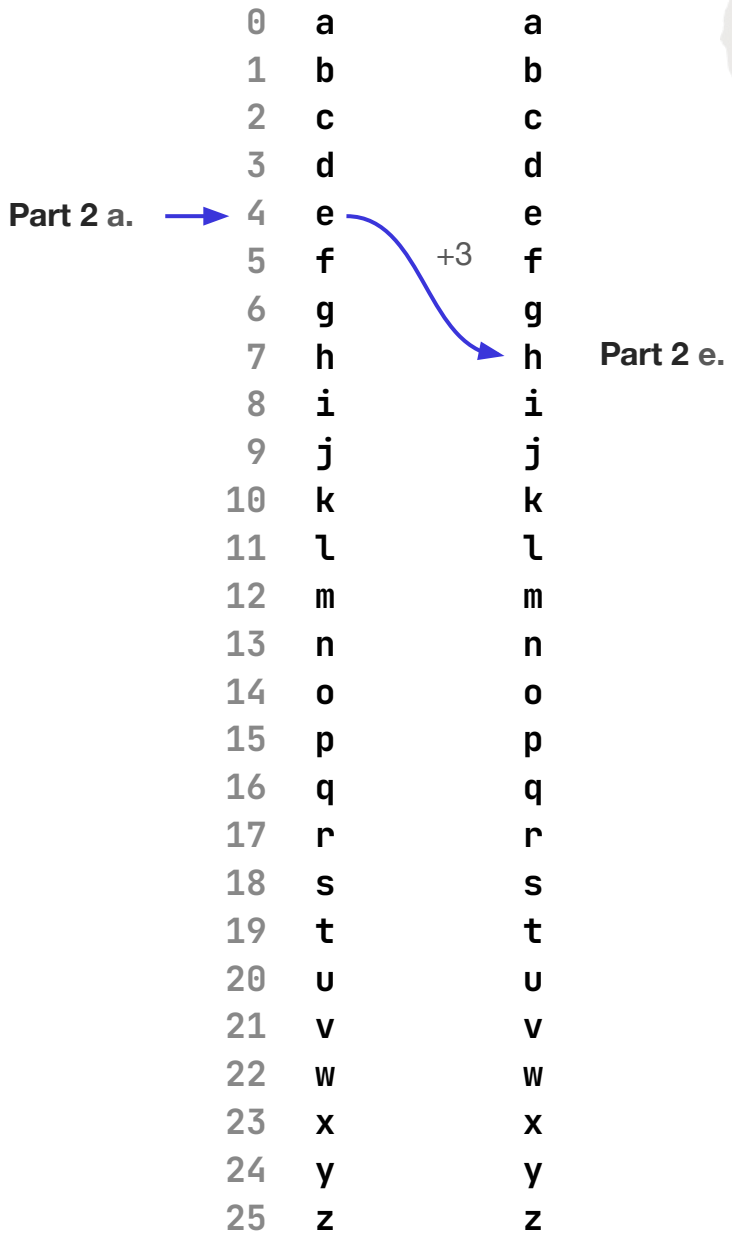
Let’s make a Cipher for “e” with shift 3

Part 2 Make letter cipher for each letter by getting its index and applying a shift

- **a.** Proceed with L_2 which is ‘**e**’
- **b.** ‘**e**’ appears at index 4 in our numbered alphabet to the right
- **c.** Add a shift of 3 to the index: 4+3=7
- **d.** Wrap the alphabet as needed; since 7 is still in the alphabet, we leave it alone
- **e.** The index of our cipher letter is 7, which is ‘**h**’

Progress

1	y	b
2	e →	h
3	p	



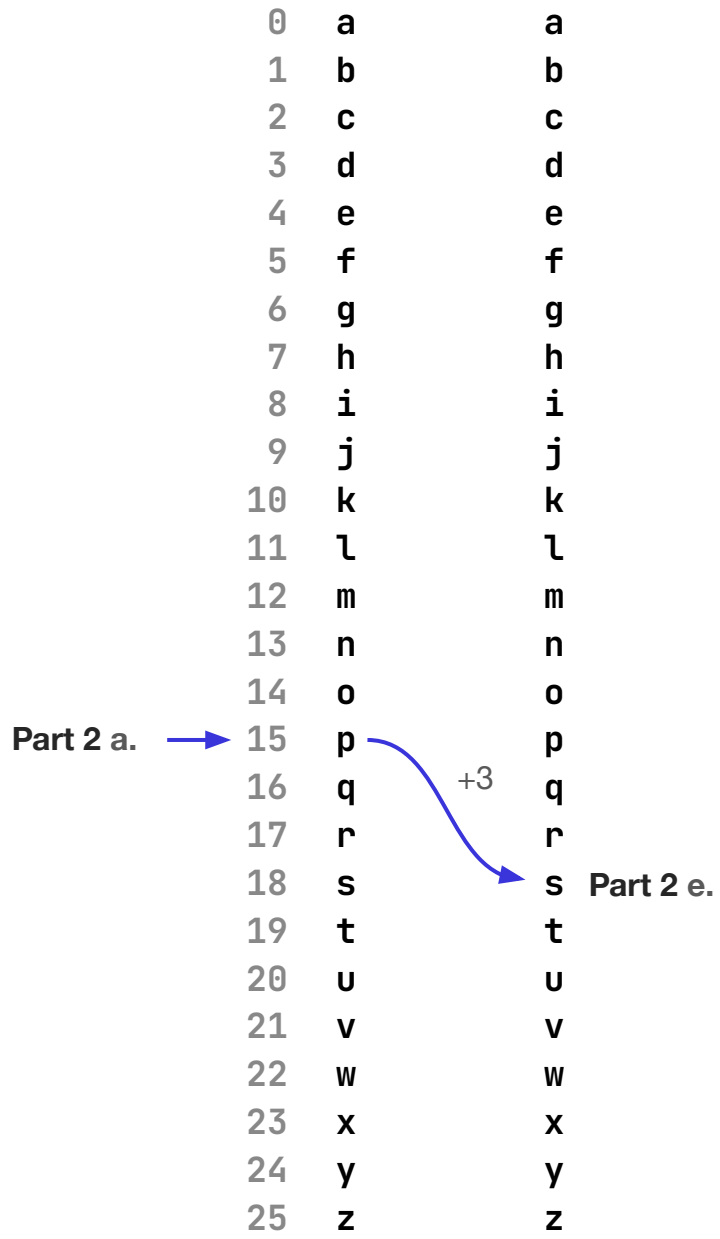
Let’s make a Cipher for “p” with shift 3

Part 2 Make letter cipher for each letter by getting its index and applying a shift

a. Proceed with L_3 which is ‘**p**’
b. ‘**p**’ appears at index 15 in our numbered alphabet to the right
c. Add a shift of 3 to the index: 15+3=18
d. Wrap the alphabet as needed; since 18 is still in the alphabet, we leave it alone
e. The index of our cipher letter is 18, which is ‘**s**’

Progress

1	y	b
2	e	h
3	p →	s



Let’s put our cipher back together

Part 3 Take the cipher letters **(L)** and reassemble in the same order

$$L_1, L_2, \ldots, L_n$$

ex: “**yep**” becomes “**bhs**”

Part 4 We finished!!

Our Cipher