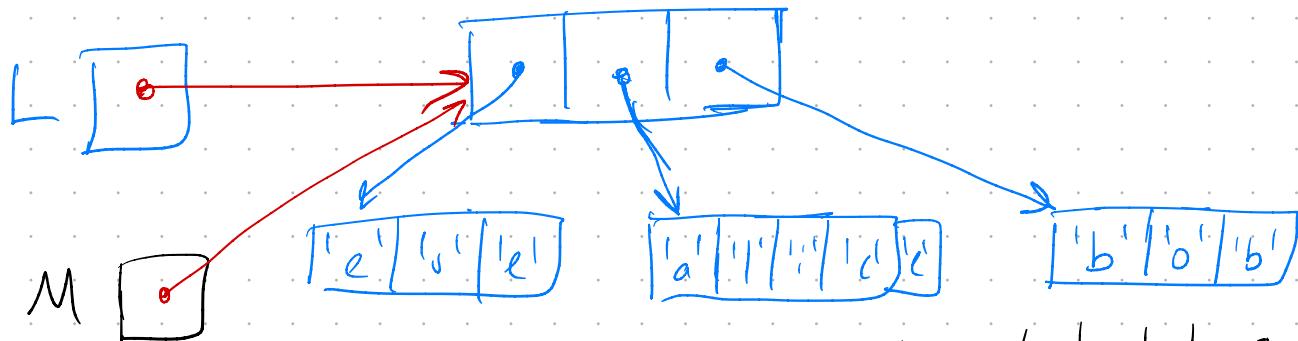


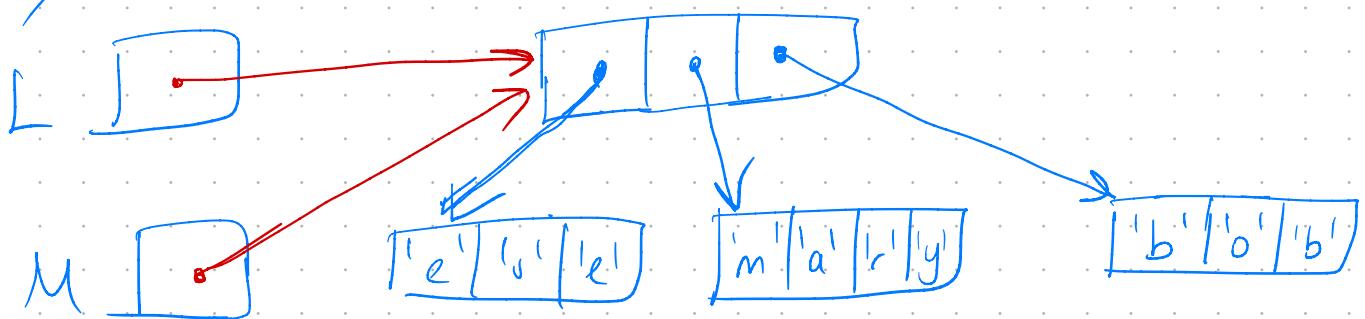
# Box and Arrow Diagram Solutions Question 1

(a) 1)  $L = ["eve", "dice", "bob"]$

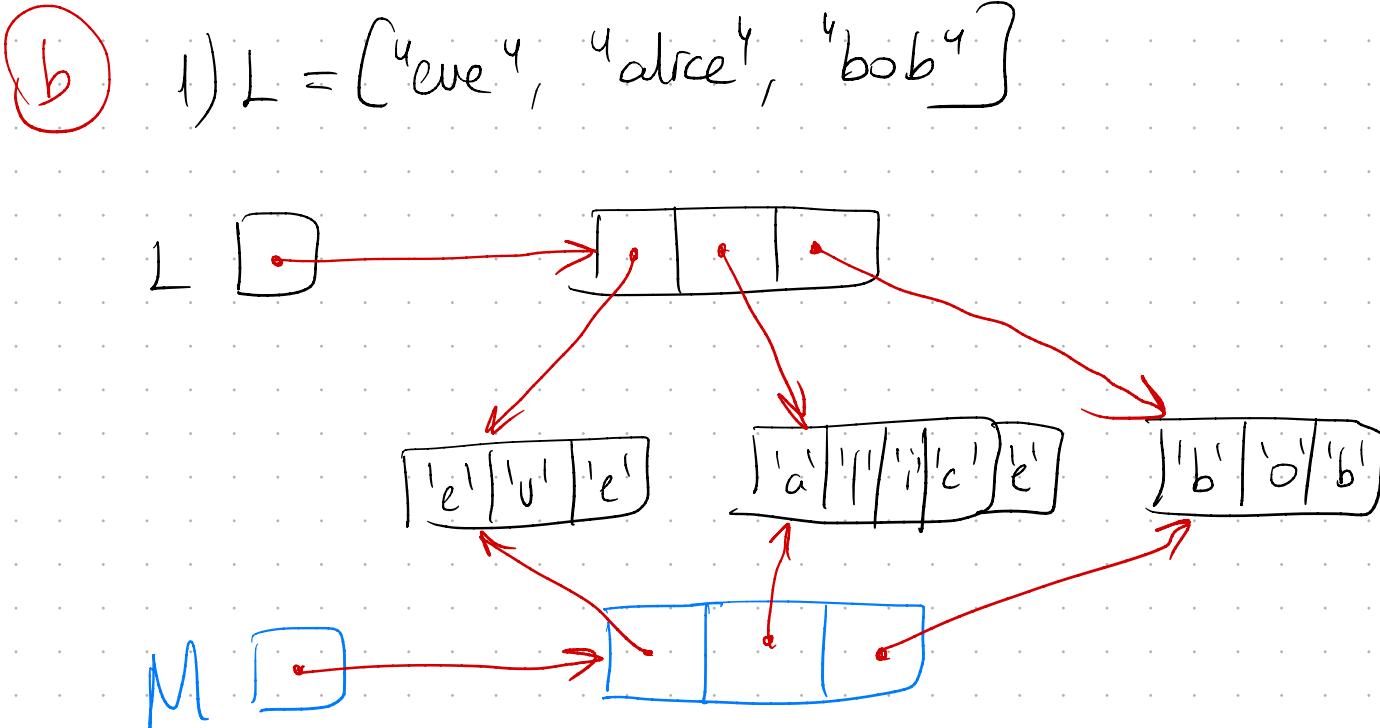


2)  $m = L$  (made an assignment w/out list so it referencing to references of values in the list)

3)  $L[1] = "mary"$  (change will be reflected on M, too)



4)  $\text{print}(M[1])$  mary

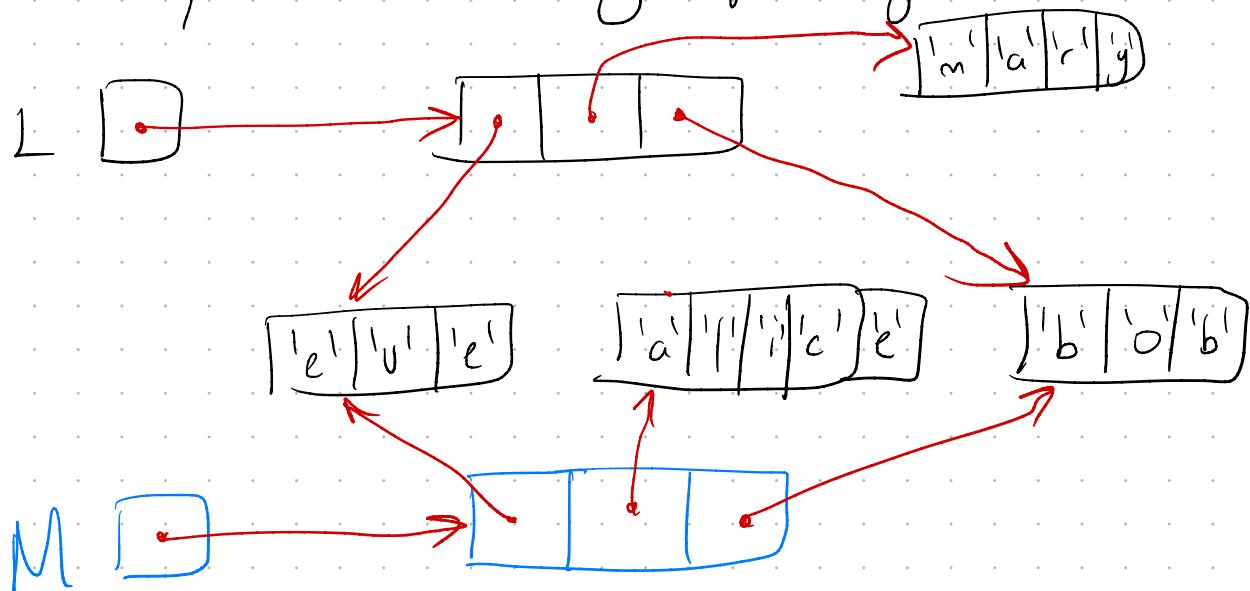


2)  $M = \text{list}(L)$

usage of `list()` makes  $M$ 's referencing to the values instead of value references.

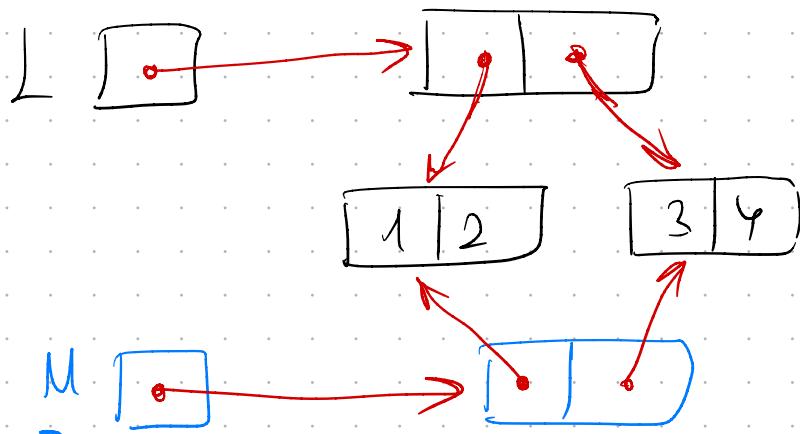
3)  $L[1] = "moy"$

once a new assignment done to immutable list member, a new memory space gets allocated -



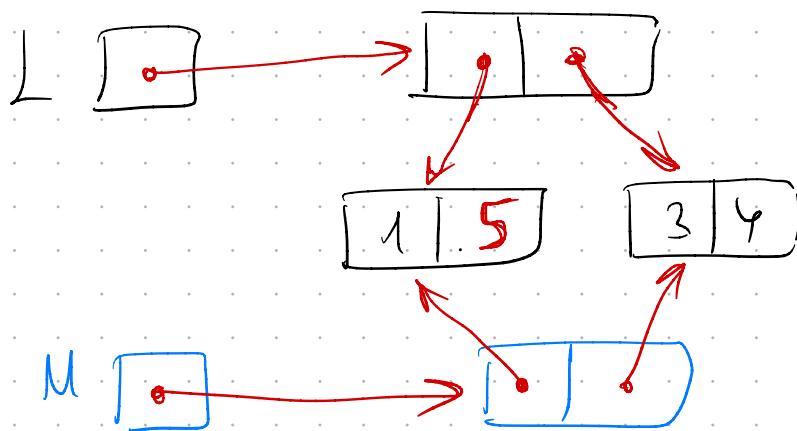
4)  $\text{print}(M[1])$       alice

(c) 1)  $L = [[1, 2], [3, 4]]$

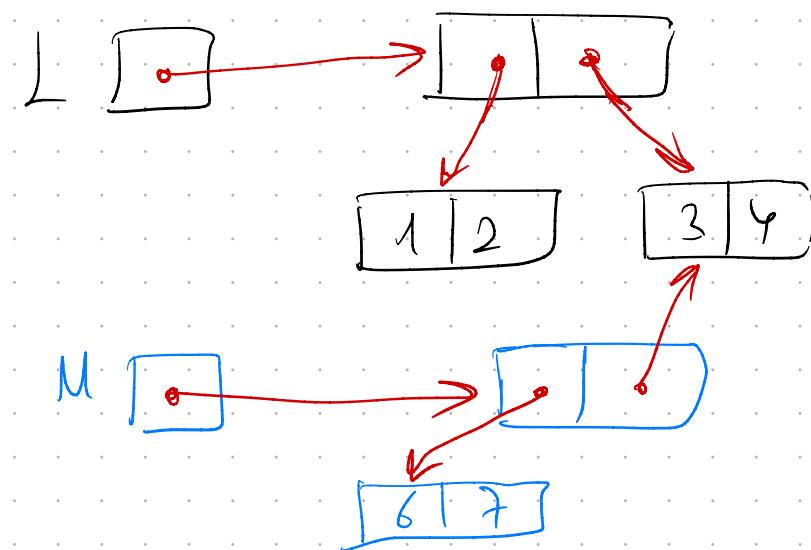


2)  $M = \underline{list + (L)}$  *list + creates a new reference object referencing to the values of L.*

3)  $L[0][1] = 5$



4)  $M[0] = [6, 7]$



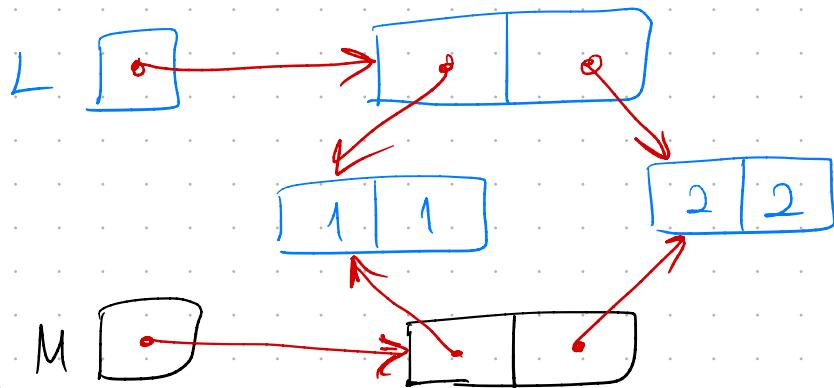
5)  $\text{print}(L, M)$

$[[1, 5], [3, 4]]$

$[[6, 7], [3, 4]]$

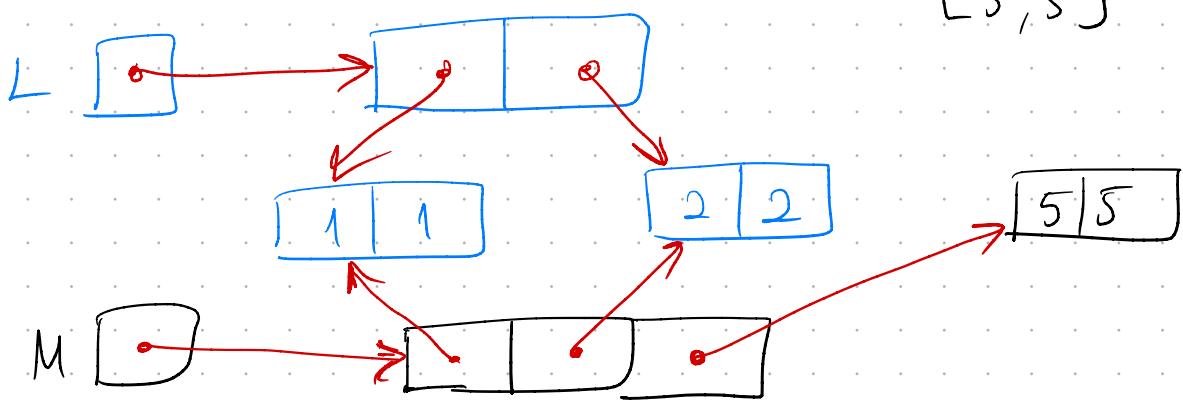
④

1)  $L = [1, 1], [2, 2]]$



(2)  $M = \text{list}(L)$

3)  $M.append([5, 5])$  → will create a new (3<sup>rd</sup>) reference point to values [5, 5]



4)  $\text{print}(L, M)$

$[(1, 1), (2, 2)]$   $[(1, 1), (2, 2), (5, 5)]$