Recursion

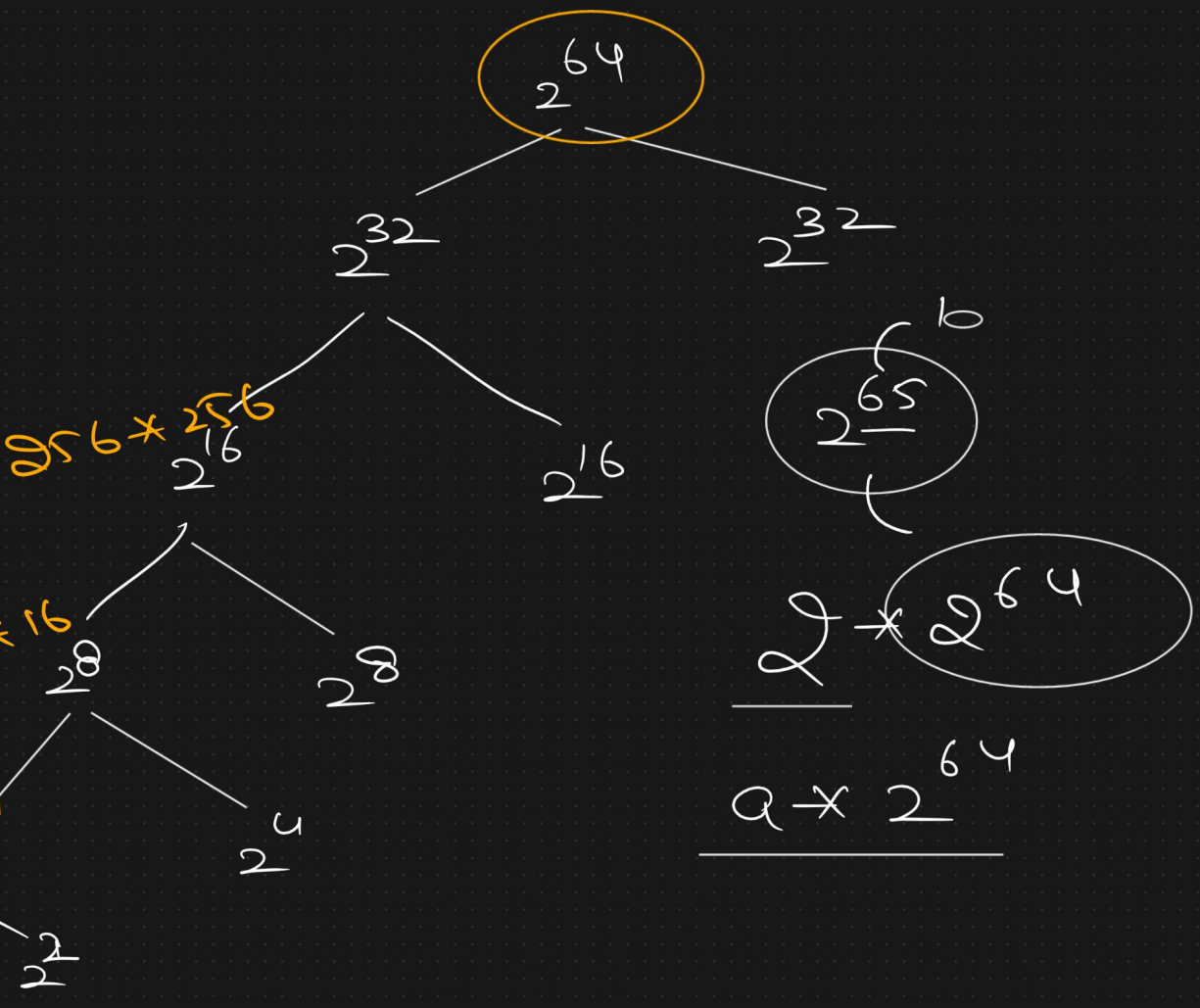
Power of an Element

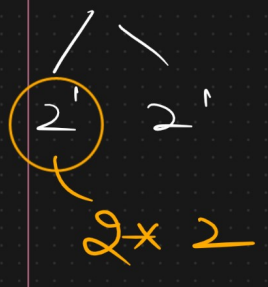
BigInteger

$2^{64} = 0$

Why ??

$2^{64} = 2^{32} \cdot 2^{32}$





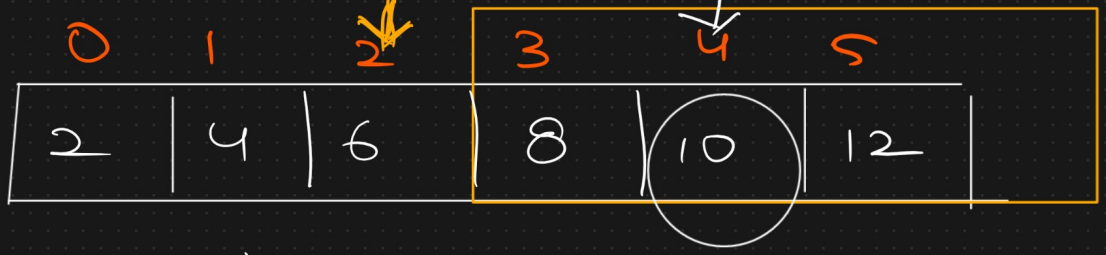
Base case

$a^1 = a$

n == 1

return a

Binary Search



low = 0, high = 5, target = 10

binarySearch(arr, low, high, target)

mid = 2

mid = low + (high - low)/2

if (arr(mid) == target)

cond 1 ——— return mid;

else if (arr(mid) < target)

Recursion

cond 2 binarySearch(arr, mid+1, high, target)

else {

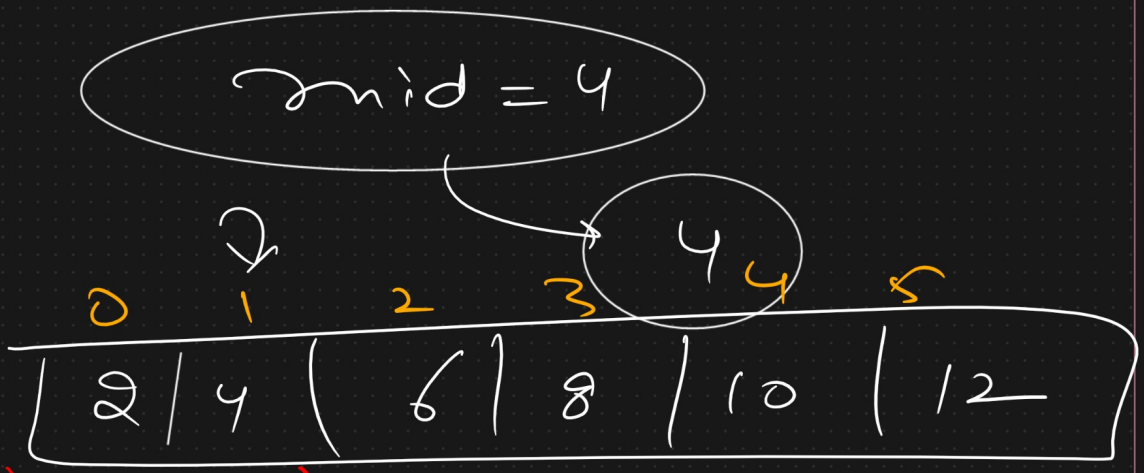
binarySearch(arr, low, mid-1, target)

cond3

---

low = 3, high = 5

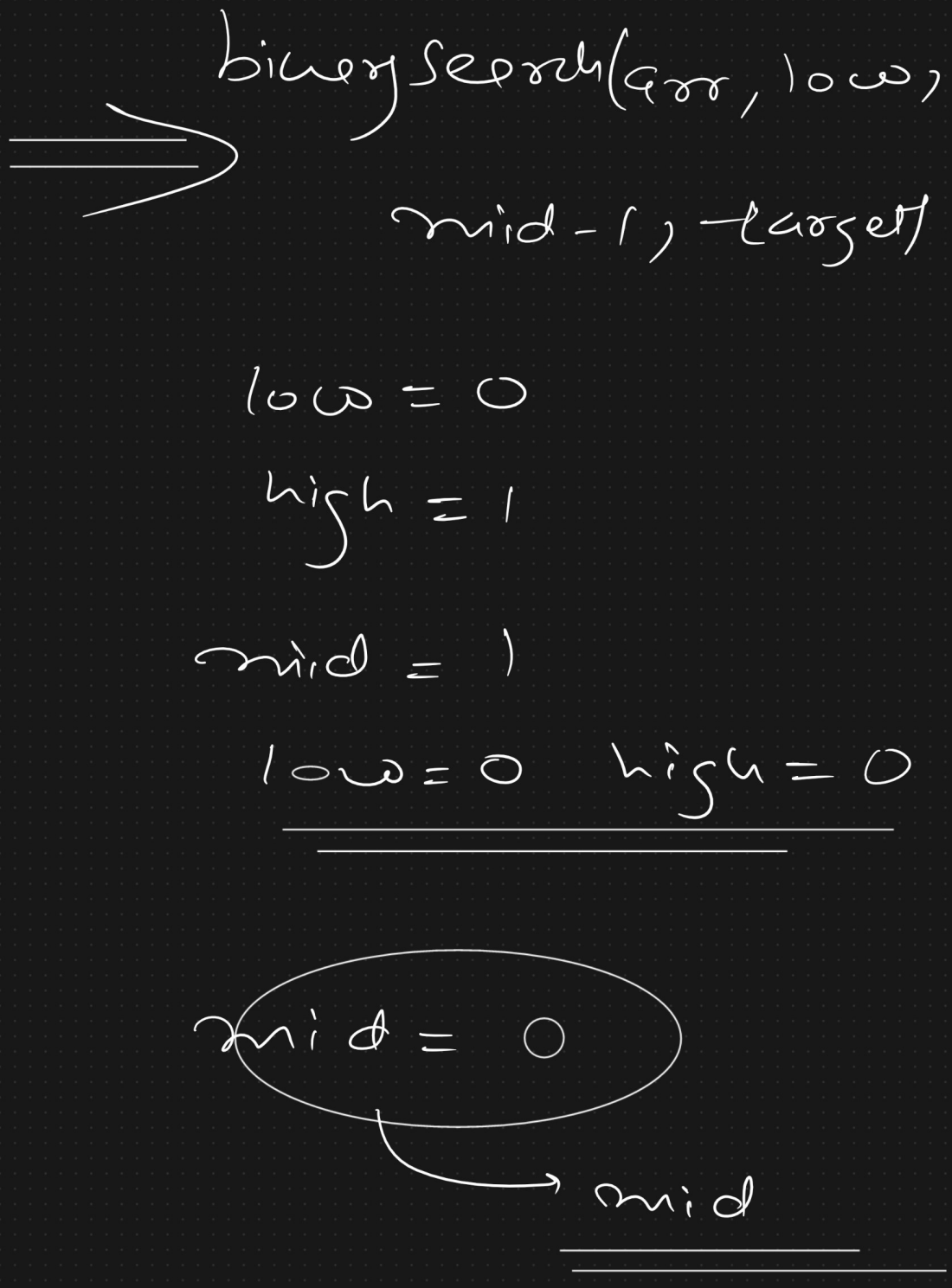
target = 10



target = 2

low = 0, high = 5

mid = 2


binarySearch(arr, low,
mid-1, target)
low = 0
high = 1
mid = 1
low = 0 high = 0
mid = 0
mid