1.

a = [6, 1, 5, 7, 3, 9, 4, 8]

def merge(left, right):

res = []

while left and right:

if left[0] < right[0]:

res.append(left.pop(0))

else:

res.append(right.pop(0))

res = res + left + right

return res

def mergesort(lists):

if len(lists) <= 1:

return lists

mid = len(lists)//2

left = mergesort(lists[:mid])

right = mergesort(lists[mid:])

return merge(left,right)

print(mergesort(a))

2.

a = [6, 1, 5, 7, 3, 9, 4, 8]

def merge(left, right):

res = []

while left and right:

if left[0] < right[0]:

res.append(left.pop(0))

else:

res.append(right.pop(0))

res = res + left + right

return res

def mergesort(lists):

if len(lists) <= 1:

return lists

mid = len(lists)//2

left = mergesort(lists[:mid])

right = mergesort(lists[mid:])

return merge(left,right)

def search(number, des):

low = 0

upper = len(number) - 1

while low <= upper:

mid = (low + upper) // 2

if number[mid] < des:

low = mid + 1

elif number[mid] > des:

upper = mid - 1

else:

return mid

return -1

b = mergesort(a)

print(b)

find1 = search(b, 2)

print("找到數值 2 於索引 " + str(find1) if find1 >= 0 else "2 不存在於數列中")

find2 = search(b, 8)

print("找到數值 8 於索引 " + str(find2) if find2 >= 0 else "8 不存在於數列中")

3.

a = int(input())

def fibo(n):

if n == 0:

return 0;

elif n == 1:

return 1;

return fibo(n-1) + fibo(n-2)

ans = fibo(a)

print(ans)