def merge(data, left, middle, right):

# num\_left = middle – left

num\_left = middle – left + 1

data\_left = [0] \* num\_left

# for i in range(num\_left+1):

for i in range(num\_left):

data\_left[i] = data[left+i]

num\_right = right – middle

data\_right = [0] \* num\_right

for i in range(num\_right):

# data\_right[i] = data[middle+i]

data\_right[i] = data[middle+1+i]

j = left

m = 0

n = 0

while m < num\_left and n < num\_right:

if data\_left[m] < data\_right[n]:

data[j] = data\_left[m]

m += 1

else:

data[j] = data\_right[n]

n += 1

j += 1

if m < num\_left:

data[j] = data\_left[m]

j += 1

m += 1

if n < num\_right:

# data[j] = data[n]

data[j] = data\_right[n]

j += 1

n += 1

def msort(data, left, right):

#while left < right:

if left < right:

middle = (left + right) / 2

msort(data, left, middle+1)

msort(data, middle, right)

merge(data, left, middle, right)

def merge\_sort(data):

msort(data, 0, len(data)-1)

data = [1,3,8,5,6,7,4,9,2]

print('\nbefore merge sort')

for i in data:

print i,

merge\_sort(data)

print('\nafter merge sort')

for i in data:

print i,