In [1]:

```
def bubblesort(list):

# Swap the elements to arrange in order
   for iter_num in range(len(list)-1,0,-1):
      for idx in range(iter_num):
         if list[idx]>list[idx+1]:
            temp = list[idx]
            list[idx] = list[idx+1]
            list[idx+1] = temp
list = [19,2,31,45,6,11,121,27]
bubblesort(list)
print(list)
```

```
[2, 6, 11, 19, 27, 31, 45, 121]
```

In [2]:

```
def merge_sort(unsorted_list):
   if len(unsorted_list) <= 1:
      return unsorted_list
# Find the middle point and devide it
   middle = len(unsorted_list) // 2
   left_list = unsorted_list[:middle]
   right_list = unsorted_list[middle:]

   left_list = merge_sort(left_list)
   right_list = merge_sort(right_list)
   return list(merge(left_list, right_list))

# Merge the sorted halves
def merge(left_half,right_half):
   res = []
   while len(left_half) != 0 and len(right_half) != 0:
      if left_half[0] < right_half[0]:
         res.append(left_half[0])
         left_half.remove(left_half[0])
      else:
         res.append(right_half[0])
         right_half.remove(right_half[0])
   if len(left_half) == 0:
      res = res + right_half
   else:
      res = res + left_half
   return res
unsorted_list = [64, 34, 25, 12, 22, 11, 90]
print(merge_sort(unsorted_list))
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
C:\Users\SRINUP~1\AppData\Local\Temp/ipykernel_22344/3669642072.py in <module
>
     27    return res
     28 unsorted_list = [64, 34, 25, 12, 22, 11, 90]
---> 29 print(merge_sort(unsorted_list))

C:\Users\SRINUP~1\AppData\Local\Temp/ipykernel_22344/3669642072.py in merge_s
ort(unsorted_list)
      7    right_list = unsorted_list[middle:]
      8
----> 9    left_list = merge_sort(left_list)
     10    right_list = merge_sort(right_list)
     11    return list(merge(left_list, right_list))

C:\Users\SRINUP~1\AppData\Local\Temp/ipykernel_22344/3669642072.py in merge_s
ort(unsorted_list)
      8
      9    left_list = merge_sort(left_list)
---> 10    right_list = merge_sort(right_list)
     11    return list(merge(left_list, right_list))
     12

C:\Users\SRINUP~1\AppData\Local\Temp/ipykernel_22344/3669642072.py in merge_s
ort(unsorted_list)
```

```
      9     left_list = merge_sort(left_list)
     10     right_list = merge_sort(right_list)
---> 11     return list(merge(left_list, right_list))
     12 
     13 # Merge the sorted halves

TypeError: 'list' object is not callable
```

In [3]:

```
def insertion_sort(InputList):
   for i in range(1, len(InputList)):
      j = i-1
      nxt_element = InputList[i]
# Compare the current element with next one
   while (InputList[j] > nxt_element) and (j >= 0):
      InputList[j+1] = InputList[j]
      j=j-1
   InputList[j+1] = nxt_element
list = [19,2,31,45,30,11,121,27]
insertion_sort(list)
print(list)
```

```
[19, 2, 31, 45, 30, 11, 27, 121]
```

In [4]:

```
def linear_search(values, search_for):
   search_at = 0
   search_res = False
# Match the value with each data element
   while search_at < len(values) and search_res is False:
      if values[search_at] == search_for:
         search_res = True
      else:
         search_at = search_at + 1
   return search_res
l = [64, 34, 25, 12, 22, 11, 90]
print(linear_search(l, 12))
print(linear_search(l, 91))
```

```
True
False
```

In [5]:

```
for i in range(10):
    print(i, end =" ")



for i in range(3, 10, 2):
    print(i, end =" ")
```

```
0 1 2 3 4 5 6 7 8 9 3 5 7 9
```

In [ ]: