MERGE SORT

Merge Sort (A, BEG, END):

Description: Here **A** is an unsorted array. **BEG** is the lower bound and **END** is the upper bound.

```
1.   If (BEG < END) Then
2.        Set MID = (BEG + END) / 2
3.        Call Merge Sort (A, BEG, MID)
4.        Call Merge Sort (A, MID + 1, END)
5.        Call Merge Array (A, BEG, MID, END)
     [End of If]
6.   Exit
```

Merge Array (A, BEG, MID, END)

Description: Here **A** is an unsorted array. **BEG** is the lower bound, **END** is the upper bound and **MID** is the middle value of array. **B** is an empty array.

```
1.   Repeat For I = BEG to END
2.        Set B[I] = A[I]                          [Assign array A to B]
     [End of For Loop]
3.   Set I = BEG, J = MID + 1, K = BEG
4.   Repeat While (I <= MID) and (J <= END)
5.        If (B[I] <= B[J]) Then                   [Assign smaller value to A]
6.             Set A[K] = B[I]
7.             Set I = I + 1 and K = K + 1
8.        Else
9.             Set A[K] = B[J]
10.            Set J = J + 1 and K = K + 1
          [End of If]
     [End of While Loop]
11.  If (I <= MID) Then                           [Check whether first half
12.       Repeat While (I <= MID)                  has exhausted or not]
13.            Set A[K] = B[I]
14.            Set I = I + 1 and K = K + 1
          [End of While Loop]
15.  Else
16.       Repeat While (J <= END)
17.            Set A[K] = B[J]
18.            Set J = J + 1 and K = K + 1
          [End of While Loop]
     [End of If]
19.  Exit
```