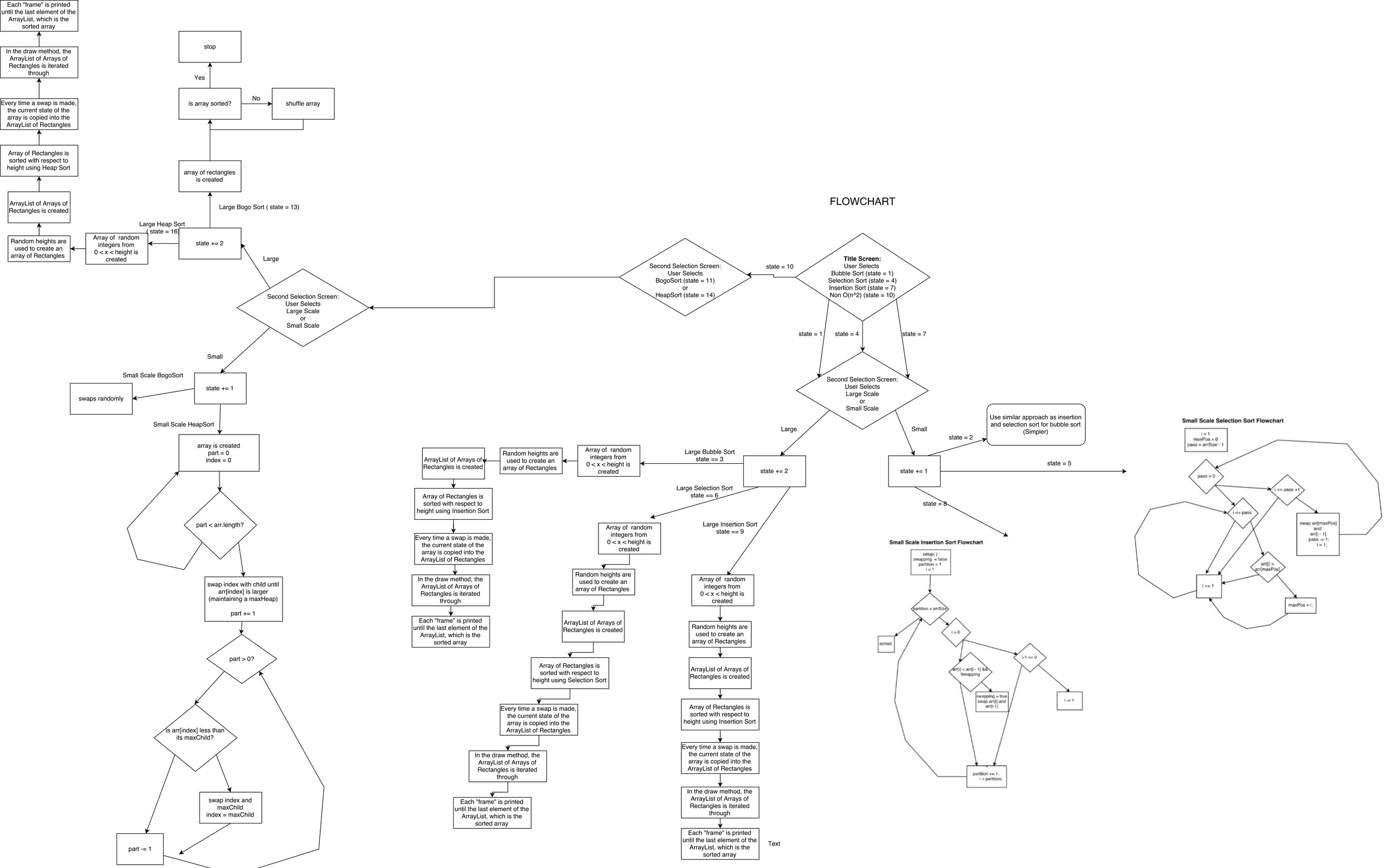
FLOWCHART


Title Screen:
User Selects
Bubble Sort (state = 1)
Selection Sort (state = 4)
Insertion Sort (state = 7)
Non O(n^2) (state = 10)
state = 10
Second Selection Screen:
User Selects
BogoSort (state = 11)
or
HeapSort (state = 14)
state = 1
state = 4
state = 7
Second Selection Screen:
User Selects
Large Scale
or
Small Scale
Large
Small
Second Selection Screen:
User Selects
Large Scale
or
Small Scale
Large
Small
state += 2
Large Bogo Sort (state = 13)
array of rectangles is created
is array sorted?
No
shuffle array
Yes
stop
Large Heap Sort (state = 16)
Array of random integers from 0 < x < height is created
Random heights are used to create an array of Rectangles
ArrayList of Arrays of Rectangles is created
Array of Rectangles is sorted with respect to height using Heap Sort
Every time a swap is made, the current state of the array is copied into the ArrayList of Rectangles
In the draw method, the ArrayList of Arrays of Rectangles is iterated through
Each "frame" is printed until the last element of the ArrayList, which is the sorted array
state += 1
Small Scale BogoSort
swaps randomly
Small Scale HeapSort
array is created
part = 0
index = 0
part < arr.length?
swap index with child until arr[index] is larger (maintaining a maxHeap)
part += 1
part > 0?
is arr[index] less than its maxChild?
swap index and maxChild
index = maxChild
part -= 1
state += 2
Large Bubble Sort
state == 3
Array of random integers from 0 < x < height is created
Random heights are used to create an array of Rectangles
ArrayList of Arrays of Rectangles is created
Array of Rectangles is sorted with respect to height using Insertion Sort
Every time a swap is made, the current state of the array is copied into the ArrayList of Rectangles
In the draw method, the ArrayList of Arrays of Rectangles is iterated through
Each "frame" is printed until the last element of the ArrayList, which is the sorted array
Large Selection Sort
state == 6
Array of random integers from 0 < x < height is created
Random heights are used to create an array of Rectangles
ArrayList of Arrays of Rectangles is created
Array of Rectangles is sorted with respect to height using Selection Sort
Every time a swap is made, the current state of the array is copied into the ArrayList of Rectangles
In the draw method, the ArrayList of Arrays of Rectangles is iterated through
Each "frame" is printed until the last element of the ArrayList, which is the sorted array
Large Insertion Sort
state == 9
Array of random integers from 0 < x < height is created
Random heights are used to create an array of Rectangles
ArrayList of Arrays of Rectangles is created
Array of Rectangles is sorted with respect to height using Insertion Sort
Every time a swap is made, the current state of the array is copied into the ArrayList of Rectangles
In the draw method, the ArrayList of Arrays of Rectangles is iterated through
Each "frame" is printed until the last element of the ArrayList, which is the sorted array
Text
state = 1
Use similar approach as insertion and selection sort for bubble sort (Simpler)
state = 5
state = 8
Small Scale Insertion Sort Flowchart
setup( )
swapping = false
partition = 1
i = 1
partition < arrSize
sorted
i > 0
arr[i] < arr[i - 1] && !swapping
swapping = true
swap arr[i] and arr[i-1]
i-1 <= 0
i -= 1
partition += 1;
i = partition;
Small Scale Selection Sort Flowchart
i = 1
maxPos = 0
pass = arrSize - 1
pass > 0
i == pass +1
i <= pass
swap arr[maxPos] and arr[i - 1]
pass -= 1;
i = 1;
arr[i] > arr[maxPos]
i += 1
maxPos = i;