Tutorial 4 - Group Activity (since you already attended and done stuff)

Rank the Input Data profiles (1^{st}, 2^{nd},3^{rd}) on how soon search would complete. You can rank the same if the speed is the same. (Hint: You can actually use the timings you got in past tutorials to decide)

Searching

Assume the search item is in the input data. Please note

Profile of Input Data	Sequential Search	Binary Search
o Randomly generated		
o Nearly Sorted		
o Reversed Order		
o Few Unique Keys		

Sorting (Here just put your GUESS (Hypothesis) – because you will do it in todays tutorial)

You can use the slide deck to get help 😊

Profile of Input Data	Bubble Sort	Selection Sort	Merge Sort
o Randomly generated			
o Nearly Sorted			
o Reversed Order			
o Few Unique Keys			

Empirical Experiment – Using Doubling Hypothesis note the timings and then paste the graph

Bubble Sort – Download BubbleSort.java

Input File	Trial 1	Trial 2	Trial 3	Average Time
1k				
2k				
4k				
8k				

Selection Sort – Download SelectionSort.java

Input File	Trial 1	Trial 2	Trial 3	Average Time
1k				
2k				
4k				
8k				

Merge Sort – Download MergeSort.java

Input File	Trial 1	Trial 2	Trial 3	Average Time
1k				
2k				
4k				
8k				