

AP Computer Science



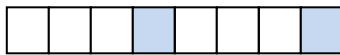
Mr Hanley



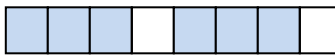
Assignment 17/10001₂/21₈/11₁₆ Version: 1.0

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Binary



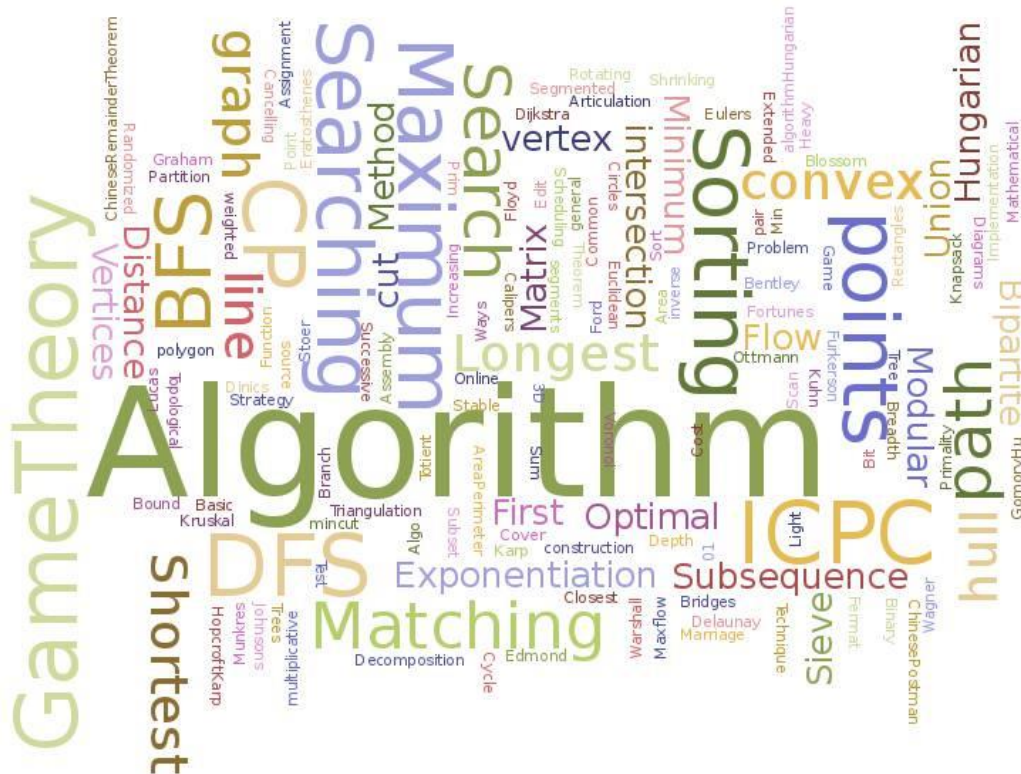
Ones Comp



Twos Comp



Sorting and Searching



Finish the States and Cities Skeleton

Research the following topics;
sequential search, binary search, selection sort, insertion sort, merge sort.
In the skeleton, there is a menu to finish.

1. Scrambled Eggs

Familiarize yourself with the skeleton and write the scrambled eggs option. This will randomize the list. (No more than 3 items can be in a row in general)

2. Verify

Ask the user if they are verifying by name or population. Verify that the list is in order. (Print the first data out of order if not in order)

Works for either alphabetical or population.

Alpha must be A-Z and population could be either biggest to smallest or smallest to biggest(must ask)

3. Sequential Search

Do it by name and by population

NEEDS TO WORK FOR UNSORTED AND SORTED LISTS!

Example: Find all records that match the name(there can be duplicates)

Find all records that match the population and print them in a list

Return a SortRecord with comparisons only, there are NO swaps when searching

4. Binary Search

Find the first name that matches

Find all records that match the population and print them in a list

Return a SortRecord with comparisons only, there are NO swaps when searching

NOTE: Binary search will find one of the Springfields, you have to look above and below for any other Springfields

5. Binary Search Recursive

Do it recursively

Return a SortRecord with comparisons only, there are NO swaps when searching

NOTE: Binary search will find one of the Springfields, you have to look above and below for any other Springfields

6. Selection Sort by Name

Do it and count comparisons and swaps

7. Selection Sort by Population

Do it and count comparisons and swaps

MUST SORT EITHER WAY, INCREASING OR DECREASING!!!!!!

8. Insertion Sort by Name

Do it and count comparisons and swaps

9. Insertion Sort by Population

Do it and count comparisons and swaps

MUST SORT EITHER WAY, INCREASING OR DECREASING!!!!

10. Merge Sort by Name

Do it and count comparisons and swaps

11. Merge Sort by Population

Do it and count comparisons and swaps

MUST SORT EITHER WAY, INCREASING OR DECREASING!!!!

12. 13-17: Make sure you have a good descriptive paragraph for how each of these guys work

Project 1 Name	Assign17SortingSkeleton
Class 1 Name	See Skeleton

Rubric	
Scrambled Eggs If there are more than 3 in a row not scrambled, -8	20
Verify	10
Selection Sort by Name	20
Selection Sort by Population	10->Increasing 10->Decreasing