Project 4 Function List

CS 372 Summer 8W1

Stahley/Stash

int BubbleSort

* Sorts the array using the bubble sort
* Input: int integerArray[]
* Returns: int sortTime
* Implemented by: Stahley

int QuickSort

* Sorts the array using the quick sort
* Input: int integerArray[]
* Returns: int sortTime
* Implemented by: Stahley

int InsertionSort

* Sorts the array using the insertion sort
* Input: int integerArray[]
* Returns: int sortTime
* Implemented by: Stash

int MergeSort

* Sorts the array using the merge sort
* Input: int integerArray[]
* Returns: int sortTime
* Implemented by: Stash

void Menu

* Displays the sort menu, allowing the user to select two sorting methods
* Calls to: RunTests
* Implemented by: Stahley

void RunTests

* Runs the selected sorts from the menu, and validates the sorts
* Input: two selected sorts (We will use function pointers here)
* Calls to: VerifySorted, DisplayResults, CalculateAverage
* Implemented by: Stahley

void DisplayResults

* Displays the average results from the sorting tests
* Input: float averageTime1, float averageTime2
* Implemented by: Stash

void GenerateRandomArray

* Initializes an array with random integers
* Input: int integerArray[]
* Calls to: RandomNumber
* Implemented by: Stash

int RandomNumber

* Generates a random number between the max and min values
* Returns: int randomInt
* Implemented by: Stash

bool VerifySorted

* Verifies the sort algorithm has correctly sorted the array
* Input: int sortedArray[]
* Returns: bool verified
* Implemented by: Stahley

float CalculateAverage

* Calculates the average sorting time
* Input: int clockTicks, int numRuns
* Returns: float avgTime
* Implemented by: Stash

Void DestroyArray

* Deallocates memory assigned to the array
* Input: int integerArray[]
* Implemented by: Stahley