PA02 - Recursive Function

Generated by Doxygen 1.8.6

Mon Oct 3 2016 21:33:18

Contents

1 File Index

1.1 File List

Here is a list of all documented files with brief descriptions:

2 File Documentation

2.1 main.cpp File Reference

Binary search for kth smallest value in array.

```
#include <iostream>
#include <fstream>
```

Functions

- int kSmall (int k, int anArray[], int first, int last, fstream &logging)
- int **main** ()

2.1.1 Detailed Description

Binary search for kth smallest value in array. A list of numbers is read in from a file and stored into an array. A pivot is then chosen, and the array is sorted partially (only the portion smaller than the pivot). This is repeated recursively until the value is found.

Version

1.01 Wei Tong (3 October 2016) Final completed version
1.00 Shehryar Khattak Initial development of main file

Note

Adapted from Frank M. Carrano and Timothy M. Henry Copyright (c) 2012 Pearson Education, Hoboken, New Jersey.

2.1.2 Function Documentation

2.1.2.1 int kSmall (int *k,* int *anArray[],* int *first,* int *last,* fstream & *logging*)

Partial sort and binary search of the array

Parameters

k	The kth smallest value of the data
anArray[]	The array containing the data
first	What is considered the first index in the array
last	What is considered the last index in the array
logging	fstream to output the logging to log.txt

Postcondition

The data in indexes smaller than the pivot are sorted and the next step is decided based on if the value to be found is smaller, larger, or the same as the pivot.

Returns

The integer from a recursion of the same function, if the k value is larger or smaller than the pivot
The pivot index, if the k value is the same as the pivot

Index