

My Project

Generated by Doxygen 1.8.14

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Chapter 1

File Index

1.1 File List

Here is a list of all files with brief descriptions:

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Chapter 2

File Documentation

2.1 main.cpp File Reference

```
#include <iostream>
#include <fstream>
#include <string>
#include <exception>
```

Functions

- void `printArray` (int numbers [], int length, std::ofstream &fout)
function to print array
- void `swap` (int *a, int *b)
function to swap to array members in different positions
- int `partition` (int a[], int low, int high, std::ofstream &fout)
- int `kSmall` (int k, int anArray[], int low, int high, std::ofstream &fout)
- int `main` ()

2.1.1 Function Documentation

2.1.1.1 kSmall()

```
int kSmall (
    int k,
    int anArray[],
    int low,
    int high,
    std::ofstream & fout )
```

function to find kth smallest in the array. Search is similar to how quick sort works but it stops at the point where pivot itself is kth smallest element. Also, we do not recur for both left and right sides of pivot, but recur for one of them according to the position of pivot.

Parameters

<i>k</i>	position of the smallest int we search for.
<i>anArray</i>	an integer array argument.
<i>low</i>	the most left array index argument.
<i>low</i>	the most right array index argument.
<i>fout</i>	file output stream argument.

2.1.1.2 main()

```
int main ( )
```

2.1.1.3 partition()

```
int partition (
    int a[],
    int low,
    int high,
    std::ofstream & fout )
```

function to partition array based on first array member as pivot. it finds the final position of the pivot in the array from low to high

Parameters

<i>a</i>	an integer array argument.
<i>low</i>	the most left array index argument.
<i>low</i>	the most right array index argument.
<i>fout</i>	file output stream argument.

2.1.1.4 printArray()

```
void printArray (
    int numbers[],
    int length,
    std::ofstream & fout )
```

function to print array

Parameters

<i>numbers</i>	an integer array argument.
<i>length</i>	array length argument.
<i>fout</i>	file output stream argument.

2.1.1.5 swap()

```
void swap (  
    int * a,  
    int * b )
```

function to swap to array members in different positions

Parameters

<i>a</i>	address of first memeber
<i>b</i>	address of second member.

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