Searching

0.3.0

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Chapter 1

File Index

1.1 File List

Here is a list of all files with brief descriptions:

Chapter 2

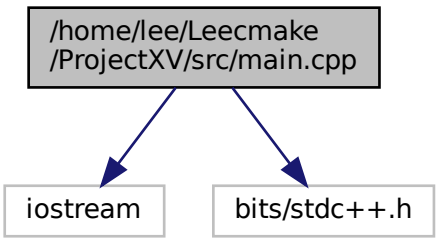
File Documentation

2.1 /home/lee/Leecmake/ProjectXV/src/main.cpp File Reference

This is an implementation of merge search.

```
#include <iostream>
#include <bits/stdc++.h>
```

Include dependency graph for main.cpp:



Functions

- int printVec (vector< int > a)
- int compare (int &x, int &y)
- void merge (vector< int > &a0, vector< int > &a1, vector< int > &a)
- vector< int > mergeSort (vector< int > &a)
- int main (int, char **)

2.1.1 Detailed Description

This is an implementation of merge search.

This is taken from the book open data sources and edited to use base C++ code.

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Date

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2.1.2 Function Documentation

2.1.2.1 compare()

```
int compare (
            int & x,
            int & y )
```

Definition at line 22 of file main.cpp.

```
22                                  {
23     if (x < y) return -1;
24     if (y < x) return 1;
25     return 0;
26 }
```

2.1.2.2 main()

```
int main (
            int ,
            char **  )
```

Definition at line 60 of file main.cpp.

```
60                          {
61     vector<int> vec = {13,8,5,2,4,0,6,9,7,3,12,1,10,11};//only works with exponents of 2 currently.
62     cout « "before: ";
63     printVec(vec);
64     mergeSort(vec);
65     cout « "after: ";
66     printVec(vec);
67 }
```

2.1.2.3 merge()

```
void merge (
             vector< int > & a0,
             vector< int > & a1,
             vector< int > & a )
```

Definition at line 28 of file main.cpp.

```
28                                                                  {
29   int i0 = 0, i1 = 0;
30   for (int i = 0; i < a.size(); i++) {
31     if (i0 == a0.size())
32       a[i] = a1[i1++];
33     else if (i1 == a1.size())
34       a[i] = a0[i0++];
35     else if (compare(a0[i0], a1[i1]) < 0)
36       a[i] = a0[i0++];
37     else
38       a[i] = a1[i1++];
39   }
40 }
```

2.1.2.4 mergeSort()

```
vector<int> mergeSort (
             vector< int > & a )
```

Definition at line 42 of file main.cpp.

```
42                                          {
43   if (a.size() <= 1) return(a);
44   vector<int> a0;
45   vector<int> a1;
46   for (int i = 0; i < a.size(); i++){
47       if (i < a.size()/2){
48           a0.push_back(a[i]);
49       }
50       else {
51           a1.push_back(a[i]);
52       };
53     }
54   mergeSort(a0);
55   mergeSort(a1);
56   merge(a0, a1, a);
57   return(a);
58 }
```

2.1.2.5 printVec()

```
int printVec (
             vector< int > a )
```

Definition at line 13 of file main.cpp.

```
13                              {
14     int* pos = a.data();
15     for (int i = 0; i < a.size(); i++){
16       cout << *pos++ << " ";
17     };
18     cout << endl;
19     return(0);
20 }
```

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