

Project 1

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Lawnmower:

Input:

n = number of light dark disk pairs in a list.

```
int numberofswaps = 0
```

```
For n
```

```
    integer i = 0
```

```
    While i < n-1
```

```
        If disk at index i is dark AND disk at  
index i+1 is light
```

```
            swap disks at index i and i+1
```

```
            increment numberofswaps
```

```
            increment i
```

```
        end While
```

```
        While i > 0
```

```
            If disk at index i is light AND disk at  
index i-1 is dark
```

```
                swap disks at index i and i-1
```

```
                increment numberofswaps
```

```
                de-increment i
```

```
            end While
```

```
        end for
```

output:

sorted list of disks

numberofswaps

big O complexity = $O(n^2)$

Alternate:

Input:

n = number of light dark disk pairs in a list.

```
int numberofswaps
```

```
for n
```

```
    for (n*2)+1
```

```
        If disk at index i is dark AND disk at  
index i+1 is light
```

```
            swap disks at index i and i+1
```

```
            increment numberofswaps
```

```
        end for
```

```
    end for
```

output:

sorted list of disks

numberofswaps

big O complexity = $O(n^2)$

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disks.hpp - Desktop - Visual Studio Code

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EXPLORER

DESKTOP

> .vscode

> CPSC 335

> hello

> test

> CPSC351

> project-lawnmover-...

disks.hpp

disks_test.cpp

project-lawnmover-main > disks.hpp > sort_lawnmower(const disk_state &)

155

156

157

158

159

160

161

162

163

}

};

// Algorithm that sorts disks using the alternate algorithm.

sorted_disks sort_alternate(const disk_state& before) {

int numOfSwap = 0;

disk_state after(before.total_count()/2);

for(size_t i = 0; i < (after.total_count()/2)+1; i++) {

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

● student@tuffix-vm:~/Desktop/project-lawnmover-main\$ make

g++ -std=c++11 -Wall disks_test.cpp -o disks_test

./disks_test

disk_state still works: passed, score 1/1

sorted_disks still works: passed, score 1/1

disk_state::is_initialized: passed, score 3/3

disk_state::is_sorted: passed, score 3/3

alternate, n=4: passed, score 1/1

alternate, n=3: passed, score 1/1

alternate, other values: passed, score 1/1

lawnmower, n=4: passed, score 1/1

lawnmower, n=3: passed, score 1/1

lawnmower, other values: passed, score 1/1

TOTAL SCORE = 14 / 14

○ student@tuffix-vm:~/Desktop/project-lawnmover-main\$

bash

bash proje...

Ln 185, Col 2

Spaces: 2

UTF-8

LF

C++

Linux

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EXPLORER

DESKTOP

.vscode

CPSC 335

hello

test

CPSC351

project-lawnmover-...

CPSC 335 Project 1 ...

disks_test

disks_test.cpp

disks.hpp

LICENSE

Makefile

rubrictest.hpp

README.md

OUTLINE

TIMELINE

disks.hpp

README.md

disks_test.cpp

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Group Members:

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PROBLEMS

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DEBUG CONSOLE

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alternate, n=4: passed, score 1/1

alternate, n=3: passed, score 1/1

alternate, other values: passed, score 1/1

lawnmower, n=4: passed, score 1/1

lawnmower, n=3: passed, score 1/1

lawnmower, other values: passed, score 1/1

TOTAL SCORE = 14 / 14

student@tuffix-vm:~/Desktop/project-lawnmover-main\$

bash

bash proje...

Ln 3, Col 41

Spaces: 4

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