

p-code for left_to_right algorithm

n = total number of whites

sort_left_to_right (V):

initialize variables	(1 step)
for i from 0 to n	(n steps)
x = i # reset position back to the left after swaps	(1 step)
for j = x from n - x while j increments by 2	(n step)
V.swap left index with index+1 (right)	(1 step)
Increment swap count	(1 step)
Return	(1 step)

Code for Algorithm

```
sorted_disks sort_left_to_right(const disk_state& before) {
    int x = 0;
    int swaps = 0;
    for (int i = 0; i < (before.total_count()/2); i++) {
        x = i; // reset back to the left
        for (int j = x; j < (before.total_count() - x); j += 2) {
            before.swap(j);
            swaps++;
        }
    }
}
```

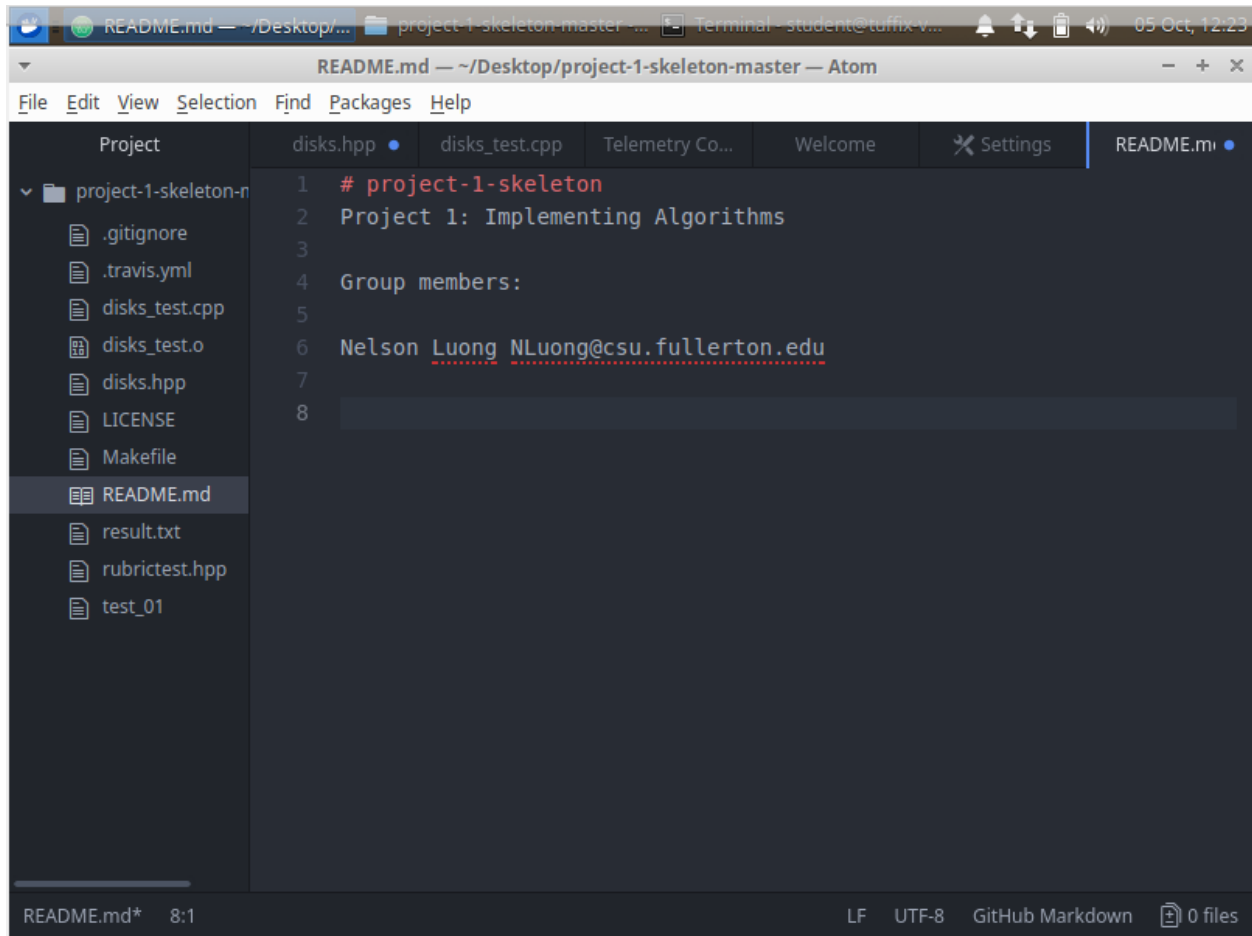
```
return sorted_disks(before, swaps);
```

P-code for Lawnmower method

Sort_lawnmower(V)

incomplete

Screenshot



The screenshot shows the Atom text editor interface. The left sidebar displays a file tree for the 'project-1-skeleton-master' directory, with files including .gitignore, .travis.yml, disks_test.cpp, disks_test.o, disks.hpp, LICENSE, Makefile, README.md (selected), result.txt, rubrictest.hpp, and test_01. The main editor area shows the content of README.md, which includes a title 'Project 1: Implementing Algorithms', a section 'Group members:', and a list of group members: Nelson Luong, NLuong@csu.fullerton.edu. The status bar at the bottom indicates 'README.md*' at line 8, column 1, with encoding 'UTF-8' and format 'GitHub Markdown'.

```
1 # project-1-skeleton
2 Project 1: Implementing Algorithms
3
4 Group members:
5
6 Nelson Luong NLuong@csu.fullerton.edu
7
8
```

Time Complexity

Analysis for Left to Right

$$\begin{aligned} T(n) &= 1 + (n(1(n+1+1))) + 1 \\ &= n(n+1+1) + 1 \\ &= n^2 + n + n + 1 \\ &= n^2 + 2n + 1 \\ &= n^2 + n \\ &= O(n^2 + n) \\ &= O(n^2) \end{aligned}$$

Analysis for Lawnmower

#Incomplete