



Algorithm Analysis / Design

Practical Report

Kushagra Lakhwani
2021UCI8036

CSE (Internet of Things)
Semester 3

Contents

1	Introduction	3
1.1	Course Objectives	3
2	Radix Sort	4
2.1	Description	4
2.2	Algorithm	4
2.3	Code	5
3	Methods	5
4	Results	5
5	Conclusion and Future Directions	5
5.1	Course/Semester Reflection	5

1 Introduction

The introduction should clearly state and give a relatively short and essential overview of the topic you are focusing on. References to definitions can be made here. The introduction should not contain the conclusions. At the end of the introduction, the outline of the paper may be described.

1.1 Course Objectives

Summarize the main goals/objectives that you accomplished this semester.

2 Radix Sort

2.1 Description

Write any results (related to data) in this section. Be sure to include figures with meaningful captions.

2.2 Algorithm

Write the algorithm in this section. Be sure to include figures with meaningful captions.

```
input : A bitmap  $Im$  of size  $w \times l$ 
output: A partition of the bitmap

special treatment of the first line;
for  $i \leftarrow 2$  to  $l$  do
    special treatment of the first element of line  $i$ ;
    for  $j \leftarrow 2$  to  $w$  do
        left  $\leftarrow$  FindCompress( $Im[i, j - 1]$ );
        up  $\leftarrow$  FindCompress( $Im[i - 1, ]$ );
        this  $\leftarrow$  FindCompress( $Im[i, j]$ );
        if left compatible with this then
            if left < this then Union(left, this);
            ;
            else Union(this, left);
        end
        if up compatible with this then
            if up < this then Union(up, this);
            ;
            else Union(this, up);
        end
    end
    foreach element  $e$  of the line  $i$  do FindCompress( $p$ );
end
```

Algorithm 1: disjoint decomposition

2.3 Code

3 Methods

Write about the methods you learned about in this section. You do not have to re-write all you read in this part, but you should summarize what you learned or developed in your work.

You may include some examples of code here, but most of your code should be in your Jupyter notebooks.

4 Results

Write any results (related to data) in this section. Be sure to include figures with meaningful captions.

5 Conclusion and Future Directions

Summarize your work and findings in this section.

5.1 Course/Semester Reflection

Write a 150 - 300 word reflection on the course/semester, focusing on how you have grown as a mathematician, a specific challenge you faced and how you overcame it this semester, and any advice you may have for future students (or future you) in the research group.

This part is for you and I appreciate your time reflecting on this unique experience during this semester.

Note: You may choose to write your reflection in a language other than English. If you write your reflection in a language other than English or Spanish.