

Design and Implementation of an Algorithm for a Problem

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ABSTRACT

In this report, we study a problem and design an efficient algorithm to solve the problem. We implemented the algorithm and evaluated its performance against previous proposed algorithms that solves the same problem. Our results show that our algorithm runs faster.

1. INTRODUCTION

Many problems exist in computer science. In this project, we studied one particular important problem and propose a solution for it.

1.1. Background

In this subsection, we briefly discuss the history and background of the problem. A detail literature survey is presented in Chapter 2.

The problem we study in this report is an important one. This problem is first proposed in 1990 in the context of graph theory (smith90graph). Zhang gives the first algorithm to the problem and applied it to solve several problems in artificial intelligence (zhang91aizhang92ai). More recently, a slightly different formulation of the problem is studied independently (kovsky92diffali94diff). None of the previous work uses the technique that we propose in this project. Thus, we believe that our algorithm is novel.

Next, we formally defined the problem. We adopt the definition given by Kovsky (kovsky92diff).

We will now describe briefly our solution to the problem defined above.

1.2. Paper Organization

The rest of this paper is organized as follows. In Section 2 we describe some related work.

2. RELATED WORK

In this section, we present some previous research result that is related to our work.

3. PROBLEM AND ALGORITHM

We now formally defined our problem and present our solution.

4. EVALUATION

To evaluate our solution, we implemented the solution using C++, and test it on many randomly generated inputs. We compare our solution with previously proposed method We found that our method shows significant improvement over previous solutions.

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5. CONCLUSION

In this paper, we have presented a solution to solve a problem. Our solution employ a simple technique, yet is able to achieve significant improvement over previously proposed method.