



Advanced Algorithms

Assignment 2: Traveling Salesman Problem

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1 Introduction

For this assignment, we implemented and analyzed the running times and the errors of three algorithms. The algorithms implemented are:

1. Nearest Neighbor Algorithm
2. Random Insertion Algorithm
3. 2-approximate Algorithm

2 Nearest Neighbor Algorithm

2.1 Input and Data Structures

2.2 Implementation

2.3 Complexity

3 Random Insertion Algorithm

3.1 Input and Data Structures

3.2 Implementation

3.3 Complexity

4 2-approximate Algorithm

4.1 Input and Data Structures

4.2 Implementation

4.3 Complexity

5 Results

5.1 Table of results

5.2 Graph of the execution time comparison

5.3 Graph of the error comparison

6 Conclusion