

**Department of Electrical and Computer Engineering**

**North South University**

**CSE 373 Design and Analysis of Algorithms**

**Project Report**

**PROJECT TITLE**

**STUDENT NAME1 ID# 1**

**STUDENT NAME2 ID# 2**

**STUDENT NAME3 ID# 3**

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**ECE Department**

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# Chapter 1 Introduction

## Problem Statement

[Provide a brief description of the problem you are solving. Explain why this problem is significant and any relevant background information.]

## Objective

[Clearly state the goals of your project and what you intend to achieve through the analysis of the algorithms.]

## Scope

[Discuss the scope of your project, including any constraints, assumptions, and limitations that apply to your analysis.]

# Chapter 2 Analysis of Algorithms

## 2.1 Algorithm 1: Brute Force Algorithm

2.1.1 Description:

[Provide a detailed explanation of the algorithm, including how it works and its typical applications.]

2.1.2 Pseudocode:

[Present the pseudocode for the algorithm, making it clear and easy to understand.]

2.1.3 Time Complexity Analysis:

[Analyze the time complexity of the algorithm using asymptotic notation (Big O, Big Theta, Big Omega). Provide explanations for how you derived these complexities.]

2.1.4 Space Complexity Analysis:

[If applicable, analyze the space complexity of the algorithm.]

## 2.2 Algorithm 2: Dynamic Recursive Solution (Top – Down)

2.2.1 Description:

[Provide a detailed explanation of the algorithm, including how it works and its typical applications.]

2.3.2 Pseudocode:

[Present the pseudocode for the algorithm, making it clear and easy to understand.]

2.2.3 Time Complexity Analysis:

[Analyze the time complexity of the algorithm using asymptotic notation (Big O, Big Theta, Big Omega). Provide explanations for how you derived these complexities.]

2.2.4 Space Complexity Analysis:

[If applicable, analyze the space complexity of the algorithm.]

## 2.2 Algorithm 3: Dynamic Iterative Solutions (Bottom – Up)

2.3.1 Description:

[Provide a detailed explanation of the algorithm, including how it works and its typical applications.]

2.3.2 Pseudocode:

[Present the pseudocode for the algorithm, making it clear and easy to understand.]

2.3.3 Time Complexity Analysis:

[Analyze the time complexity of the algorithm using asymptotic notation (Big O, Big Theta, Big Omega). Provide explanations for how you derived these complexities.]

2.3.4 Space Complexity Analysis:

[If applicable, analyze the space complexity of the algorithm.]

# Chapter 3 Experimental Results

## 3.1 Algorithm 1: [Algorithm Name]

3.1.1 Experimental Setup:

[Describe the experimental setup, including the hardware and software used, the input data sets, and how the experiments were conducted.]

[Present the results of your experiments. Use tables, charts, or graphs to illustrate the performance of each algorithm for best, average and worst cases in terms of time complexity. Ensure that the data is clearly labeled and easy to interpret.]

3.1.2 Best Case:

3.1.3 Average Case:

3.1.4 Worst Case:

## 3.2 Algorithm 2: [Algorithm Name]

3.2.1 Experimental Setup:

[Describe the experimental setup, including the hardware and software used, the input data sets, and how the experiments were conducted.]

[Present the results of your experiments. Use tables, charts, or graphs to illustrate the performance of each algorithm for best, average and worst cases in terms of time complexity. Ensure that the data is clearly labeled and easy to interpret.]

3.2.2 Best Case:

3.2.3 Average Case:

3.2.4 Worst Case:

## 3.3 Algorithm 3: [Algorithm Name]

3.3.1 Experimental Setup:

[Describe the experimental setup, including the hardware and software used, the input data sets, and how the experiments were conducted.]

[Present the results of your experiments. Use tables, charts, or graphs to illustrate the performance of each algorithm for best, average and worst cases in terms of time complexity. Ensure that the data is clearly labeled and easy to interpret.]

3.3.2 Best Case:

3.3.3 Average Case:

3.3.4 Worst Case:

# Chapter 4 Conclusions

## 4.1 Summary

[Summarize the key findings from your analysis and experiments. Highlight the main points and the most significant results.]

## 4.2 Insights

[Discuss any insights or important lessons learned from the project. Reflect on the effectiveness of the different algorithms and their suitability for the problem.]

# References

1. J. J. Gómez-Valverde, A. Antón, G. Fatti, B. Liefers, A. Herranz and A. Santos, “Automatic glaucoma classification using color fundus images based on convolutional neural networks and transfer learning,” Biomedical Optics Express, vol. 10, pp. 892-913, 2019.
2. L. Xu, X. Shu and J. Shu, “Research on Depression Tendency Detection Based on Image and Text Fusion,” International Conference on Artificial Intelligence and Big Data, Chengdu, China, pp. 326-331, 2022.
3. J. C. Maxwell, A Treatise on Electricity and Magnetism, 3rd ed., vol. 2. Oxford: Clarendon, 1892, pp.68–73.
4. DoctorKoi. Accessed on: May. 12, 2023. [Online]. Available: https://www.doctorkoi.com.