TABLE OF CONTENTS

# CHAPTER 1: INTRODUCTION

1. Abstract

The primary aim of this project is to develop a sorting visualization tool that assists in reviewing fundamental sorting algorithms before the final examination. This tool incorporates six distinct sorting algorithms, categorized into two tiers: three basic algorithms including Bubble Sort, Insertion Sort, and Selection Sort, and three advanced algorithms comprising Shell Sort, Merge Sort, and Quick Sort.

The significance of this project lies in its potential to provide an interactive and engaging platform for students to reinforce their understanding of sorting algorithms. By visualizing the sorting process step-by-step, users can gain a deeper insight into the intricacies of each algorithm and comprehend their respective efficiencies in sorting various datasets. Furthermore, this tool enables users to compare the performance of different algorithms under varying input conditions, fostering a comprehensive understanding of algorithmic complexities.

1. Overview
2. Project objectives

This project focuses on solidifying your understanding and practical application of Object-Oriented Programming (OOP) and Data Structure & Algorithm principles through the development of an interactive app. By the end of this project, we should be able to:

1. Concept Mastery:
   1. Algorithm complexity
   2. Algorithm operations
2. Design and Development Skills
   1. OOP design
   2. DSA design
   3. App development techniques
3. Overall Understanding

* Gain a deeper knowledge about principles and benefits of DSA and OOP as well

1. Additional objectives

* Implement UI for users to interact with

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1. Specification

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| --- | --- |
|  |  |
| Python 3.11.8 |  |
| Tkinter 8.6.12 |  |

# CHAPTER 2: PROJECT TIMELINE

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# CHAPTER 3: METHODOLOGY

1. UML Diagram
2. Project Structure
3. User Interface
4. App Implementation