

# PA3: Priority Queues and Heaps

Kevin Lei

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## 1 Introduction

This assignment aims to implement a priority queue using three different methods: an array representation of a binary heap, a sorted array, and an unsorted array. In this report, we will discuss the theoretical time complexities for the enqueue operation and heap sort for each of these methods. Additionally, we will describe an experiment designed to gather evidence supporting the theoretical time complexities. Finally, we will compare and contrast the results obtained from each implementation to gain a better understanding of how the choice of data structure affects the performance of a priority queue in terms of time complexity and practical implementation.

## 2 Theoretical Analysis

## 3 Experimental Setup

## 4 Experimental Results