PROJECT REPORT

Heap Sort Visualization Using Multiple Heaps

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APPROVAL AND RATIFICATION PAGE

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ABSTRACT

The Heap Sort algorithm is one of the less popular sorting algorithms among the students of computer science of faculty Unika Soegijapranata. One of the causes why Heap Sort popularity is lack are the complexity and quite a lot processes in the algorithm. The Heap Sort algorithm uses Heap or Tree as its data structure. The purpose of this scientific paper is to make the students more familiar with and understand the Heap Sort algorithm using multiple heaps.

Creating heap visualization using multiple heaps as the data structure. Multiple heaps goal's is to break up the sorting process in two trees and the process runs at the same time. The GUI uses java swing and value of the tree using the integer type data, inputted by the user. Sorting is done ascendingly.

The final result of this scientific paper is visualizing Heap Sort algorithm. This program able to represent the data into binary tree and break it into multiple heaps then sort them ascendingly, also colouring each node in different colours.

Keyword: Heap sort, multiple heaps, binary tree, java swing.

PREFACE

This scientific paper contains the processes of creating Heap Sort Visualization starting from problem recognition, problem solving method, scope, and purpose, and form of final result of scientific paper. Chapter one in the scientific paper contains troubleshooting and problem solving. In chapter one also discussed the focus and the goal of the scientific paper.

Chapter two discusses the literature study, which summarizes various journals that support the manufacturing of scientific paper. The journal summary contains the researchers, topics, and methods used in the research journal. Writing journals is needed to avoid plagiarism as well as useful for reference to the manufacture of scientific paper.

Chapter Three contains steps taken to complete the scientific paper which includes literature study, analysis and design, implementation and testing. Chapter 4 discusses problem solving analysis during research and project design in the form of use case and flowchart diagram.

Chapter five has a sub-chapters that contains the implementation of data structure and algorithm in the program as well as program testing, data inputted and displayed in the program. While chapter six discusses the final conclusion of scientific work and suggestions for further research.

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