**Documentation CST2550 Group Project**

Group name: **Hyper-Sonic solutions**

Group participants:

Project Idea: A dentist booking system for Doctors, Admin, and customer to use.

**Justification**

Chosen Algorithm: Quick sort.

Quick sort is a sorting algorithm based in the Divide and conquer algorithm that picks an element as a pivot and partitions the given array around the picked pivot by placing the pivot in its correct position in a stored array. It will repeat this step until the array is sorted. This algorithm has a sharper edge against the others because it has an average case time complexity with versatile applications in various fields.

Unlike merge sort it doesn’t require a temporary array to merge the sorted arrays which gives it the advantage of data space. Because of how fast and efficiently it performs in comparison to selection sort, merge sort and insertion sort it has gained a lot of popularity and is usually used for bigger data.

Quick sort has a space complexity of O(logn), making it an excellent choice for situations when space is limited. However, it is considered as an unstable algorithm since it doesn’t maintain the key-value pairs initial order and can be difficult to implement if recursion isn’t available as it is a recursive process.

DESIGN DECISIONS:

TESTING METHODS

FUNCTIONS IN OWN FILES: makes it easier to test.