# Algorithms Sorting – Quick Sort

For the implementation of a sorting algorithm into the Bluebrook Airport system, the chosen algorithm is QuickSort. The purpose of using a sorting algorithm in the system is to sort all flight times in order of earliest, this is essential for the time board as all flight times are added to the queue data structure for the time board.  
  
**Process of Quicksort in the flight time board system:**

1. The system will select a pivot point from the unsorted list of flight times from the XML file.  
2. Place all flight times earlier/later than the pivot flight time.  
3. Sort sub list of flight times less than/greater than the pivot flight time.  
4. Ignore sub lists if flight times is empty.  
4. Place all sorted flight times in the time board queue

Properties  
Amount of comparisons: n²/2  
Amount of flight time swaps: 2 N log N  
Big O’ Notation: O(N log N) – Linearlogarithmic (Increasing growth with N for times)

Advantages  
Fastest computational speeds of the other sorting algorithms.  
Disadvantages  
Difficult to implement in comparison to other algorithms.