



National University of Sciences and Technology (NUST)
School of Electrical Engineering and Computer Science

Department of Computing

CS250: Data Structure and Algorithms

Class: BSCS 5AB

Lab 9: Merge Sort

Date: 29th November, 2016

Time: 9am- 12pm / 2pm – 5pm

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Lab 9: Merge Sort

Introduction

Proposed by Jon Von Neumann, Merge sort is one of the best algorithms out there for sorting purposes.

Objectives

To implement Merge sort and understand its complexity

Tools/Software Requirement

Visual Studio c++ / Java / Python

Lab Tasks

You are required to upload the lab tasks on LMS and the name of that tasks must be in this format YourFullName_reg#.cpp

Remember to comment your code properly.

Task 1

Implement Merge Sort with different N and with different values of H. Compare the performance of the algorithm with respect to number of iterations vs N and time taken vs N. Can you find a mathematical model for the best, average and worst cases?

Task 2:

There is a list of airlines with the number of aircraft that they own available on <https://www.flightradar24.com/data/aircraft> . This data is sorted alphabetically. We need to sort this data based on number of aircraft in decreasing order. Store this data in a file, sort it and then re-store it back in the required order.

Deliverable

Source code of Tasks 1 and 2.