Module 5: Overview

Overview

In this module, we will study the divide-and-conquer algorithm design paradigm, using merge sort and quicksort as examples. We also study the concept of activation records. With the aid of activation records, we will have a very clear picture of the execution of algorithms, as well as scoping of identifiers. We will also have a clear picture of the relationship between the caller and the callee.

Learning Objectives

By the end of this module, you will be able to:

1. Learn the concepts of activation record and runtime stack
2. Apply these concepts to better understand the execution of recursive algorithms
3. Have a deeper understanding of scoping rules
4. Have a deeper understanding of mergesort and quicksort

Readings

Read the following:

- Section 2.1
- Section 7.1
- Section 7.2
- Section 7.4
- **https://stackoverflow.com/questions/1266233/what-is-activation-record-in-the-context-of-c-and-c** ⬕ **(https://stackoverflow.com/questions/1266233/what-is-activation-record-in-the-context-of-c-and-c)**
- **https://en.wikipedia.org/wiki/Call_stack#Structure** ⬕ **(https://en.wikipedia.org/wiki/Call_stack#Structure)**