

# DATA STRUCTURES AND ALGORITHMS

# **LEARNING OUTCOMES**



G1	Understand concept and purpose of data structures and algorithms
G2	Understand recursive algorithm
G3	Understand stacks and queues
G4	Understand linked lists
G5	Understand trees and binary search trees
G6	Understand sorting and searching algorithms

## LESSONS



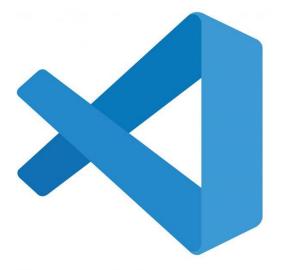
- Lesson 1: Introduction to Data Structures and Algorithms
- Lesson 2: List Abstract Data Types and Linked Lists
- Lesson 3: Stacks and Queues
- Lesson 4: Trees and Binary Search Trees
- Lesson 5: Sorting and Searching Algorithms
- Lesson 6: Assignment Presentation

## SOFTWARES/TOOLS



**Visual Studio Code**: Visual Studio Code is a lightweight but powerful source code editor which runs on your desktop and is available for Windows, macOS and Linux. It support many language, such as C/C++, C#, Java, Python, PHP, Go,...

Link download: <a href="https://code.visualstudio.com">https://code.visualstudio.com</a>



### **MATERIALS**



#### **C Programming Book and Tutorials:**

[1] Algorithms and Data Structures: An Approach in C - Charles F. Bowman: https://www.amazon.com/Algorithms-Data-Structures-Approach-C-dp-0195174801/dp/0195174801/

[2] Online C Programming Course:

https://www.cprogramming.com/algorithms-and-data-structures.html

# ASSESSMENT STRUCTURE



ASSESSMENT STRUCTURE					
Test	Weight	Type of Assessment	Number of Exercises	Scope of knowledge and skill	
Exercise	30%	Practice	All	Lesson 1-5	
Final Assignment	70%	Practice	1 Assignment	Lesson 1-5	



