NANYANG TECHNOLOGICAL UNIVERSITY
SINGAPORE

CE1107/CZ1107: DATA STRUCTURES AND ALGORITHMS

Course Introduction

College of Engineering
School of Computer Science and Engineering

INSTRUCTOR INFORMATION

- Owen Noel **Newton Fernando**
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- Office: **N4-02C-80**

- Office hours:
  - **Wednesday 10.30 AM-12.30 PM** (no appointment needed)
  - Other times by appointment (Email)

ROADMAP (LECTURES)

Week	Monday (Online) 10.30-11-30	Wednesday (Online) 16.30-17.30
1	Introduction to Dynamic Data Structures and Algorithms	Linked Lists
2	Linked Lists	Linked Lists
3	Stacks and Queues	Stacks and Queues
4	Binary Trees	Binary Trees
5	Binary Trees	Binary Search Trees
6	Binary Search Trees	Revision

ROADMAP (LABS AND TUTORIALS AND LAB TESTS)

Week	Tutorial	Lab
1	**No Tutorial**	**No Labs**
2	**No Tutorial**	**No Labs**
3	Linked Lists	Linked Lists
4	Stack and Queues	Stack and Queues
5	**No Tutorial**	**No Tutorial**
6	Binary Tree and Binary Search Trees	Binary Trees
7	**No Tutorial**	Binary Search Trees

ROADMAP (ASSIGNMENTS)

Week	Assignment	Deadline (11.59 PM)
4	Linked Lists	**05/2/2021**
5	Stack and Queues	**12/2/2021**
6	Binary Tree	**19/2/2021**
7	Binary Search Trees	**26/2/2021**

ROADMAP (LAB TEST)

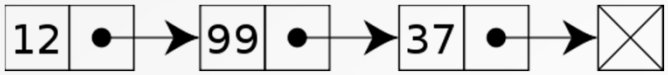
Week	Lab Test 1
Recess Week	Date and time (To be announced later)

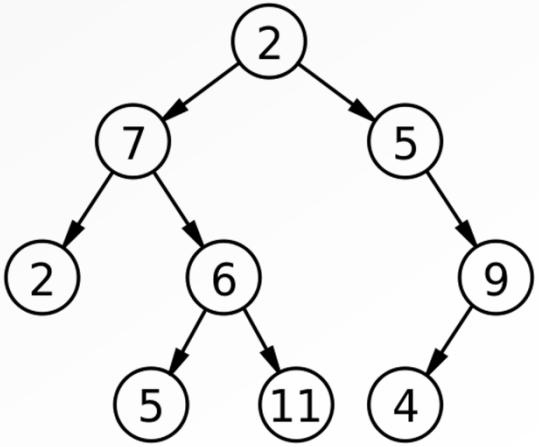
SHORT VERSION OF THE NEXT FIVE WEEKS

- What will we be working with?
  - Structures
  - Pointers
  - Structures inside structures
  - Pointers to structures
  - Pointers inside structures
- Make sure you know
  - What pointers/structures are
  - How to declare and use pointers/structures

LINEAR VS. NON-LINEAR DATA STRUCTURES

- Start with linear data structures
  - Arranged sequentially, similar to an array
- Next, non-linear data structures
  - Not sequential, all sorts of layouts possible





THINGS YOU SHOULD DO

- Draw lots of pictures
  - Visualising how objects are laid out in memory helps with understanding
- Concept before code
  - Following pointers can be tricky if you don’t have a mental model of the data structure
  - With the right model as a reference, you can implement the structure in any language
- Use the debugger
  - Once you start writing code, you’ll do silly things with pointers and you need to be able to track down your mistakes