Week 11 - Software Design

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CSCA48 - TUT002

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Content Covered so Far

- C programming
- Memory model
- Arrays and strings
- Pointers
- CDTs & ADTs
- Linked lists
- Testing & Debugging
- Binary Trees & BSTs
- Big O & Complexity Analysis
- Recursion
- Graphs

Your Task

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2. Notes should be stored in a **single linked list** with timing information stored along with each note and the list is ordered in terms of increasing time-index just like A2.

(Step 1) Design the following CDT for our program to store note information in the linked list:

- time index
- frequency of the note
- length of the note
- the instrument that is supposed to play the note (suppose the synthesizer supports 64 different instruments)
- volume of the note

Your Task cont.

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- How are we going to implement that?

Note: assume we have functions to generate the sound of each individual instrument. (i.e. `piano_sound(...)` *for a piano)*

Your Final Task

Design a CDT for either a **BST** or a **Linked List** that would contain the following:

1. The data for the item it is storing.
2. Pointers to functions which operate on said data.

Reminders

- Each student to submit their own photo or scan of your work which can be the same as that submitted by members of their group.
- Ensure your file is named **exactly** as instructed on Quercus.
- You are **not** supposed to keep working on this, you will not be marked on correctness so as long as you submit work that shows you were engaged during this tutorial you will get full marks.