

Intro to C Structs and TypeDefs

C W Liew

October 1, 2019

Goals

The goals of this lab are to learn about structs and typedefs in C.

Concept Description

The file *student.c* shows how you can create composite objects in C from the basic types using the **typedef** construct. The file *ex2.c* shows how you can then use the composed object (also called a **struct**), allocate space dynamically and then access the internal fields. Note the difference between using *(dot)* . and *(arrow)* → notation.

Assignment

Your assignment for this lab consists of writing the code to implement parts of a **doubly-linked, non-circular, head, tail LinkedList**. You are provide the code in the two files - *main.c* and *LinkedList.c*. Your assignment consists of:

1. create the file *LinkedList.h* with the appropriate **typedefs**.
2. write the functions **createLinkedList** and **insertInLinkedList**. You can also add any other functions that you may need (e.g., **printLinkedList**).

Each node of the linked list has the following fields:

- a **next** field that points to the next node in the list
- a **prev** field that points to the previous node in the list
- a **data** field (int) that holds an int data