

## Lab 3

Starting with the code in `~lliang/cs261/labs/lab3` You will want to copy it into a directory of your own.

File `supplied.o` contains code that can build, display, and destroy a *linear linked list*.

For this lab, you will need to write the following two functions in `list.cpp`, and add function prototypes for them to `list.h`.

- `void duplicate(node * head, node *& newHead)`  
*recursively* create a copy of the source list with `head`. `newhead` is the head of the destination list.
- `int removeTwo(node *& head)`  
*recursively* remove all the 2s from the list

After implementing the two functions, you need to invoke the functions in `main.cpp` to test. Please label your output so that the result is clear. E.g. “duplicate copy of the list: “ or “After removing all 2: “

Create a makefile for the project and build it. Make sure your clean target doesn't remove `supplied.o`

Run your program in `valgrind` and make sure there is no memory leaks assuming the executable file is named **app**

```
valgrind --tool=memcheck --leak-check=full ./app
```

For lab3 submission, copy the above member function implementation into `lab3.txt`, then append the output of the app to the file. ftp `lab3.txt` to your local machine and upload it to the Desire2Learn dropbox.

```
./app >> lab3.txt
```