List Insert Nth

This is a **pair** exercise and must be competed in your **tutorial** or **lab** with your partner.

For this activity, you will be looking at a linked list.

Download `list.h`, or copy it into your current directory on a CSE system by running

```
$ cp /web/cs1511/17s2/week11/files/list.h .
```

Make sure you understand the `list` and `node` data structures before beginning this task.

Create a file called `listInsertNth.c` that includes the `list.h` header file. In it, you should implement `listInsertNth`, a function which takes a linked list and two integers, `n` and `val`, and creates a new node with the vlaue of `val` and places it in the `n` th position in the list (counting from 0 as with arrays). It should assume that it is given a positive integer less than or equal to the length of the list. It should have this prototype:

```
void listInsertNth (List l, int n, int val);
```

For example, if you had a list `l`, with the values `1 -> 2 -> 3 -> X` and you ran this snippet of code:

```
listInsertNth (l, 2, 17);
listPrint (l);
```

The output should be `1 -> 2 -> 17 -> 3 -> X`.

You should write your own tests in a separate file; `listInsertNth.c` should *not* contain a `main`.

To run some simple automated tests:

```
$ 1511 autotest listInsertNth
```

To run Styl-o-matic:

```
$ 1511 stylomatic listInsertNth.c
Looks good!
```

You'll get advice if you need to make changes to your code.

Submit your work with the *give* command, like so:

```
$ give cs1511 wk11_listInsertNth
```

Or, if you are working from home, upload the relevant file(s) to the `wk11_listInsertNth` activity on [Give Online](#).