

CST8234 – C Programming

Lab 06: Single Link List

In this assignment you are going to implement a set functions for a single link list.

Given the following data type:

```
typedef struct node {
    int data;
    struct node *next;
}node_t;
```

and the given functions:

```
/* *****
/* Provided functions
* llist_push: Add an element to the head of the list
* llist_pop: Removes first element of the list
* llist_size: Returns number of elements in the list
* *****
```

Implement the following function by the end of the lab:

```
/* *****
/* Functions you need to implement
* EASY no need to modify the list
* llist_contains: Returns 1 if an element is contained in the list
*                0 otherwise
* llist_count: Returns the number of times an element is in the list
* llist_find: Returns the index of the first element given it finds,
*            -1 if not found
* llist_is_equal: Returns 1 if lists are the same, 0 if not
*                Two lists are the same if
*                they have the same number of elements
*                and the elements are presented in the same order
*
* MEDIUM needs to modify the list
* llist_addlast: Adds an element to the tail of the list
* llist_insert: Adds an element at index
* llist_remove: Removes first instance of value
* llist_free: Free all elements in the list
* *****
```

You MUST implement the `llist_free()` function as it is required in all tests.

By the end of the lab you must demonstrate the passing of the 7 tests.

Starting code, **makefile** and tests are provided.