Project 12, Program Design

3. (Extra Credit: 20 points) Modify the stack program (Download on Canvas>Files>Week 13>Examples and Exercises>stack) to add a `roll` function.

> 1) This extra credit problem assumes that you have completed the second in-class exercise of Week13_ch17_3_19, i.e., the `pop` and `make_empty` functions for the stack program implemented using a linked list.
>
> 2) Add a `roll` function to `stack.c`. This function will have a parameter of type `struct node*` and a return type `struct node *`. When called, it rolls the top three items on the stack. For example, if the stack has 5 elements from top to bottom: 8, 3, 9, 4, 7. After calling the `roll` function, the stack will be 9, 8, 3, 4, 7. You can assume that the stack has three items or more when it calls the roll function. The function returns the head of the linked list.
>
> 3) To test the `roll` function: in the `main` function of `stack_client.c`, after all the elements are pushed in `stack1` and `print_stack` function was called, call the `roll` function on stack1. Then call `print_stack` again to display `stack1` after rolling.

Before you submit:

1. Compile with `makefile`. Be sure it compiles on **circe** with no errors and no warnings.

2. Your source files should be read & write protected. Change file permission on Unix using chmod 600.

3. Submit all the source files, header files, and makefile in a separate zipped folder under project 12 submission.