Homework on Week 5 Lecture

1. Programming project 5.6 in textbook: need to support insert/delete of specific cells

   the insertion function interface : insert(int row, int col, int key), this will create a link and connect it properly to surrounding links. Need to check for errors, e.g., a cell already exists in that location – if so will give a warning and don't do any insertion of new links.

   deletion function interface: delete(int row, int col). After deleting a link, the link is gone, and connections are made to skip the "hole" (see the picture). Also need to check for errors such as a link doesn't exist in that location.

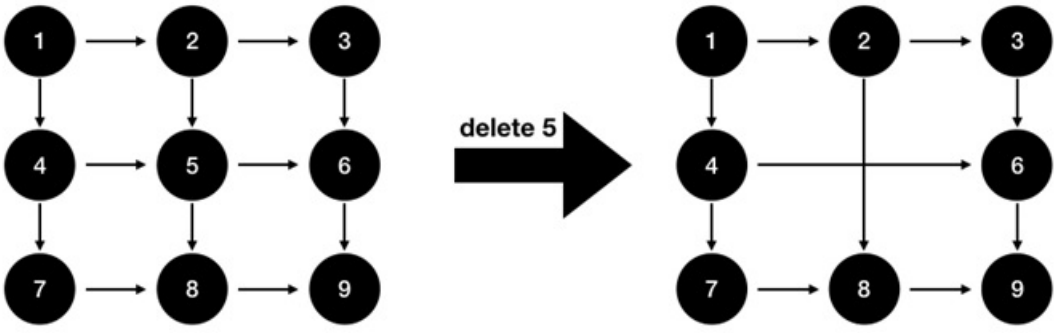
2. Add an iterator for the 2d linked list, support going up/down/left/right, get/change/remove of the value in the current cell, and display of the whole spreadsheet

   change/remove value will replace/reset the value in a link but NOT removing the link. A special value e.g., -1 can be used to indicate a link with empty value.

   Each link should also have states about its col, row, so it's easier to know which row/col a cell is at. In the assignment, problem 1 mentions "navigation" around the spreadsheet, problem 2 requires iterator up/down/left/right, they are for similar functionality. Just implementing iterator is fine, no need for problem 1's navigation.

   2D linked list's insertion function has an interface: insert(int row, int col, int key), deletion function has similar interface: delete(int row, int col). These must create or remove links, NOT values.

   After deleting a link, the link is gone, and connections are made to skip the "hole" (see the picture). Each link should also have states about its col, row, so it's easier to know which row/col a cell is at.



3. **Reverse Linked List:** Use the Linked List program from the textbook (pg190). Write a function to reverse the linked list. Keep all the functions already in the program from the textbook.

4. **Find a Cycle:** Given a linked list find if it has a cycle inside it. Use the linked list program in textbook (pg190) and add the function to check if there is a loop in the linked list.