Practice Problem: Integer Linked List

1. Write a program linked\_ints.c that prompts the user to type in integers, adds each integer one at a time to the head of a linked list, and then prints out the integers in the linked list (they'll be in reverse order from the input).

Use the following distribution code:

#include <cs50.h>

#include <stdio.h>

typedef struct node

{

int number;

struct node \*next;

}

node;

int main(void)

{

node \*list = NULL;

while (true)

{

int x = get\_int("Number: ");

if (x == INT\_MAX)

{

printf("\n");

break;

}

// TODO: Allocate a new node.

// TODO: Add new node to head of linked list.

}

// TODO: Print all nodes.

// TODO: Free all nodes.

}

b) Modify the example above to add new nodes to the end of a linked list, rather than the beginning. As a result, the list of numbers should now print out in order, instead of reverse order.

c) Modify the example above to add new nodes to the linked list such that the linked list is always kept in ascending order.