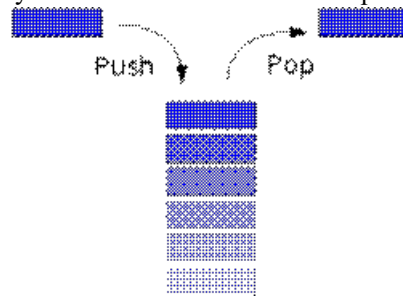


Extra Credit Stacks

Objective:

Write a generic class that creates an instance of a stack data structure using a linked list (NOT an array). This is a last in first out (LIFO) data structure. This means information put into it at the beginning can only be accessed at the end. Here's a picture



Write a class file called **IntStack** that can be composed of generic types.

- Write an interior class called **StackNode**
 - This means it is a private class within Stack
- Attributes of this interior class will be
 - Data – this is the data of the integer type
 - Next – a link to the next node
- Create the following constructors for this interior type
 - A default constructor that sets everything to null
 - A constructor where it has parameters for the data and the next link
- Back to **GenericStack**
- Attributes of this class are
 - Head – an instance of the StackNode that always keeps track of the top of the list
- Create the following constructors
 - Default – sets both head and current to null
- Create the following Methods
 - Push – this takes in integer data and then creates a new instance of the stack node and then pushes it on as the new head
 - Pop – this returns the integer value of the current head and then removes it from the list by resetting the head to the head's next link
 - canPop – this returns true if the head is not null
 - printStack – this iterates through the stack printing the data values of each item in the stack

Finally write a class that demonstrates that all the stack functionality works.