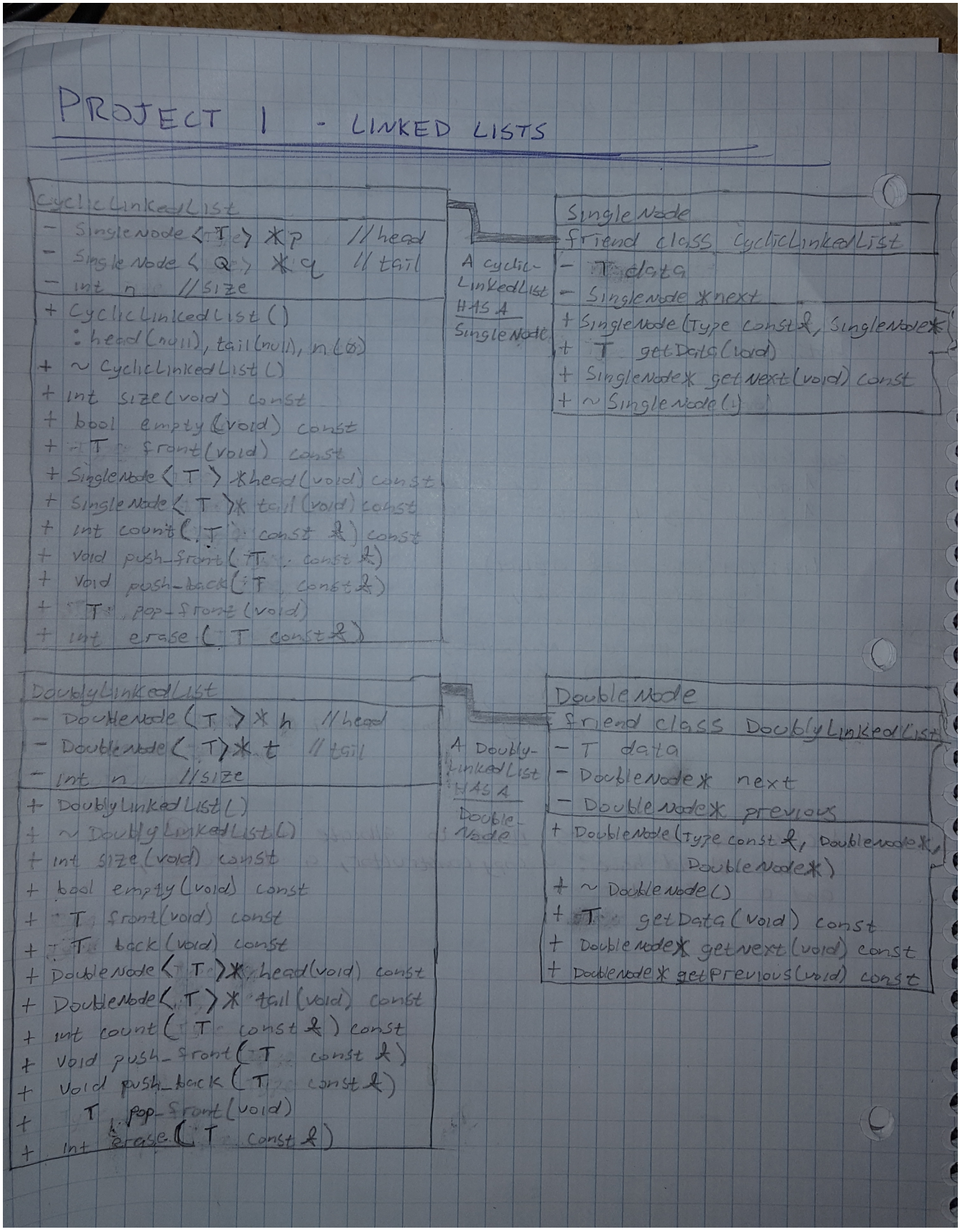
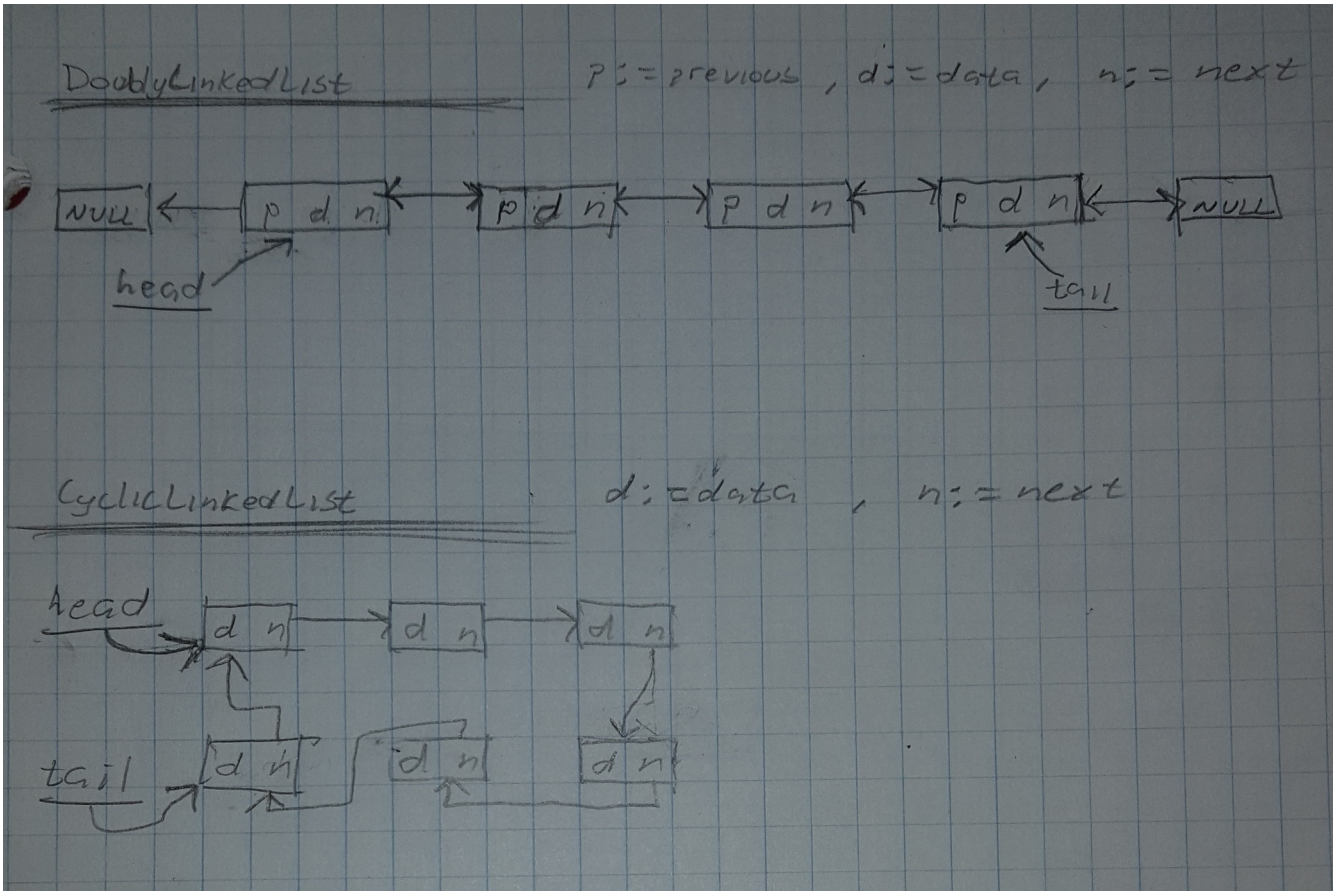
Derek Rodriguez, Derek Caprio
Project 1





The purpose of this project was to gain a deeper understanding of linked lists (singular, circular, and doubly). We achieved this through implementing 4 classes, SingleNode, DoubleNode, CyclicLinkedList, and DoublyLinkedList, all of which had the same basic functionality, yet different implementations due to the nature of the lists.

The Cyclic Linked List is simply a single linked list which contained a head and tail pointer, in which the tail's next pointer pointed back to the head node, making the linked list circular. The DoubleNode class contains two pointers, next and previous, which point to the node ahead, and also the head behind the current node. DoublyLinkedList implements this through a head and tail pointer, in which the tail nodes next pointer is null, the previous node points to the n-1th node, and the head pointer's previous pointer is null, and the head pointer points to the next pointer in the list.

We implemented 11 options in a menu, which we used as a driver file. These allowed us to create the list, count number of items, retrieve first and last, count the number of times an item appears in the list, push front and back, to add an element to the front or back, pop front and back, to remove an element from the front or back, delete instances of an item, that deleted all occurrences of a given item, and print the list.