ECE250 - Project 1
Deque Driver
Design Document

Leah Burgess, UW UserID:l2burges
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Overview of Classes

Class: Url

Description: Represents each node in a doubly linked list as a website url with a name and a url address. Also holds the prev and next node.
Member Variables: string name, string value, Url *prev, Url *next.
Member Functions:
Setters for the string name, string value, Url *previous, and Url *next.
Getters for the string name, string value, Url *previous, and Url *next.

Class: LinkedList

Description: Represents the urls as nodes in a doubly linked list.
Member Variables: Url *head, Url *tail.
Member Functions:
String insertFront(string name, string value) - create node and insert at front of list
String insertBack(string name, string value) - create node and insert at back of list
Void popFront() - remove first element in the list and reduce size of list by one
Void popBack() - remove last element in the list and reduce size of list by one
String front() - return name and url address of the first item in the list
String back() - return name and url address of the last item in the list
Void isEmpty() - check if list is empty

Class: Deque

Description: Represents a double-ended queue that inherits the LinkedList class.
Member Variables: int size, int currentSize
Member Functions:
String push_front(string name, string value) - call insertFront() if deque isn't full, otherwise call popBack() and then insertFront().
String push_back(string name, string value) - call insertBack() if deque isn't full, otherwise call popFront() and then insertBack().
Void pop_front() - if deque is not empty otherwise call popFront().
Void pop_back() - if deque is not empty otherwise call popBack().
String clear() - while the deque is not empty, call popBack().
Void Size() - print how many elements are in the deque.
String Find(string name) - iterate through deque to see if name exists in deque.
Void print() - iterate through deque backwards and print each url name and address.