Initial Assignment 3 Design

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Pseudocode

- generic class `BasicDoubleLinkedList<T>` that implements `Iterable` interface
  - inner class `Node`
  - generic inner class `DoubleLinkedListIterator<T>` that implements `ListIterator<T>` (from the java.util library)
  - other methods and fields of a doubly linked list implementation
- generic class `SortedDoubleLinkedList<T>` that extends `BasicDoubleLinkedList<T>`

UML diagram

BasicDoubleLinkedList<T>

- elements: BasicDoubleLinkedList
- head: T
- size: int
- tail: T

+BasicDoubleLinkedList()
+getSize() : int
+addToEnd(data: T) : void
+addToFront(data: T) : void
+getFirst() : T
+getLast() : T
+iterator() : ListIterator
+remove(targetData: T, comparator: Comparator) : Node
+retrieveFirstElement() : T
+retrieveLastElement() : T
+toArrayList() : ArrayList

«inner class»
Node

- data: T
- previous: Node
- next: Node

+Node()

«inner class»
DoubleLinkedListIterator

- current: Node

+DoubleLinkedListIterator()
+hasNext() : boolean
+hasPrevious() : boolean
+next() : T
+previous() : T

other methods not implemented
throw an UnsupportedOperationException

«child class»
SortedDoubleLinkedList

- compareableObject: Comparator<T>

+SortedDoubleLinkedList(compareableObject: Comparator<T>)
+add(data: T) : void
+iterator() : ListIterator<T>
+remove(data: T, comparator<T>)

other methods not implemented
throw an UnsupportedOperationException with message
'Invalid operation for sorted list.'