

## Project 2 – List Diagram

NODE extends GenericItemType

- (-)Node next
- (-)Object data
- (+)Node(Object a)
- (+)Node(Object a, Node b)
- (+)getData()
- (+)setData(Object a)
- (+)getNext()
- (+)setNext()

LIST

- (-)int counter
- (-)Node head
- (+)LinkedList()
- (+)LinkedList(Node a)
- (+)Init()
- (+)getCounter()
- (-)incrementCounter()
- (-)decrementCounter()
- (+)addHead(Object a)
- (+)addMiddle(Object a)
- (+)addTail(Object a)
- (+)Delete(index)
- (+)Sort(ASC | DESC)
- (+)Iterate()
- (+)start()
- (+) dataType getNext()
- (+)bool hasNext)

STACK extends LIST

Data: GenericItemType

- (+)Init
- (+)push()
- (+)dataType pop()
- (+)bool isEmpty()
- (+)bool isFull()
- (+)dataType showTop()

QUEUE extends LIST  
Data:Generic Item Type  
(+)Init  
(+)enqueue(data)  
(+)dataType dequeue()  
(+)bool isEmpty()  
(+)bool isFull()  
(+)sort()

GenericItemType  
(+)isLessThan(GenericItemType a)  
(+)isGreaterThan(GenericItemType a)  
(+)isEqual(GenericItemType a)

IntegerDataItem extends GenericItemType  
(-)int value  
(+)int get()  
(+)void set(IntegerDataItem  
\*Inherited members\*

StringDataItem extends GenericItemType  
(-)String value  
(+)String get()  
(+)void set(StringDataItem)  
\*Inherited members\*

IntegerDataItem – Inherits(1:1) →GenericItemType  
StringDataItem – Inherits(1:1) →GenericItemType  
NODE – Inherits(1:1) →GenericItemType  
NODE – Contains(1)→GenericItemType  
LIST – Contains(1) → GenericItemType  
QUEUE – Inherits(1:1) →LIST  
STACK—Inherits(1:1) → LIST

AppDriver –Contains(1:1:1) →List,Stack,Queue  
AppDriver -- Contains(1:m) →StringDataItem,IntegerDataItem