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Section B

Assignment 2

```
class Node<T> {  
    T data;  
    Node<T> next;  
  
    public Node(T data) {  
        this.data = data;  
        this.next = null;  
    }  
}  
  
class LinkedList<T> {  
    private Node<T> head;  
  
    public LinkedList() {  
        this.head = null;  
    }  
}
```

```
}
```

```
public void insertAtEnd(T data) {  
    Node<T> newNode = new Node<>(data);  
  
    if (head == null) {  
        head = newNode;  
    } else {  
        Node<T> last = head;  
        while (last.next != null) {  
            last = last.next;  
        }  
        last.next = newNode;  
    }  
}
```

```
public void insertAtBeginning(T data) {  
    Node<T> newNode = new Node<>(data);  
    newNode.next = head;  
    head = newNode;  
}
```

```

public void deleteNode(T key) {
    Node<T> current = head;
    Node<T> previous = null;

    if (current != null && current.data.equals(key)) {
        head = current.next;
        return;
    }

    while (current != null && !current.data.equals(key)) {
        previous = current;
        current = current.next;
    }

    if (current == null) {
        System.out.println("Key " + key + " not found.");
        return;
    }

    previous.next = current.next;
}

```

```
public void display() {  
    Node<T> current = head;  
  
    if (current == null) {  
        System.out.println("The list is empty.");  
        return;  
    }
```

```
    while (current != null) {  
        System.out.print(current.data + " , ");  
        current = current.next;  
    }  
    System.out.println("null");  
}
```

```
}
```

```
public class Main {  
    public static void main(String[] args) {
```

```
LinkedList<Integer> intList = new LinkedList<>();  
intList.insertAtEnd(10);  
intList.insertAtEnd(20);  
intList.insertAtBeginning(5);  
intList.display();
```

```
intList.deleteNode(10);  
intList.display();
```

```
LinkedList<String> stringList = new LinkedList<>();  
stringList.insertAtEnd("Feroze");  
stringList.insertAtEnd("Zeeshan");  
stringList.insertAtBeginning("Suhail");  
stringList.display();
```

```
stringList.deleteNode("Feroze");  
stringList.display();
```

}
}