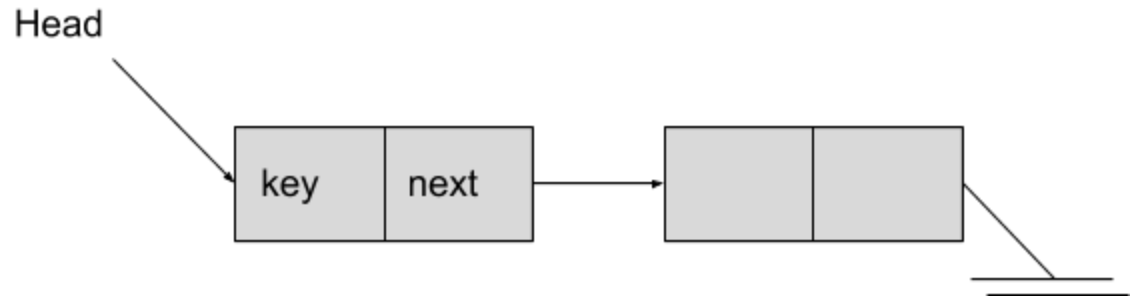
Exercise: Linked List



Exercise 1: Create a class Element
Create a class Element with two attributs:

- key: an integer
- next: a reference to another Element object

You will also redefine the toString function such as it displays “(key)”. An element with key=42 will be displayed as “(42)”

Exercise 2: Create a class MyList
Create a class MyList that represent a List of **Element**s.

Exercise 3: IsEmpty
Add the IsEmpty method to **MyList** that returns true if the list is empty.

Exercise 4: toString
Add the toString method to **MyList** so that it displays “-> (key1) -> (key2) -> (key3) ->”

Exercise 5: addFirst
Add a method void addFirst(Element e) to **MyList**

Exercise 6: removeFirst
Add a method Element removeFirst to **MyList**.
This method will remove the first Element of the list and return it

Exercise 7: addLast
Add a method void addLast(Element e) to **MyList**

Exercise 8: removeLast
Add a method Element removeLast to **MyList**.
This method will remove the last Element of the list and return it (or null if not exists)

Hint: use recursion

Exercise 9: findKey

Add a method Element findKey(int key) to **MyList** that returns the first **Element** e in the list where key == e.key (or null if not exists)

Exercise 10: main

Create a main method that:

1. Create a MyList
2. Add an Element (key = 3) using addLast
3. Add an Element (key = 1) using addFirst
4. Add an Element (key = 4) using addLast
5. Delete the first Element using removeFirst
6. Add the Element you've just removed at the end using addLast
7. Print the List