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/**
 * Deque.java
 * Classe Deque - um Deque implementado com lista duplamente encadeada
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 */

package container.insercao;

import container.*;

public class Deque {
    private DLNode header, trailer;    // referencia para o nó do inicio
    private int size;    // numero de elementos

    //Construtor
    public Deque(){
        header = new DLNode();
        trailer = new DLNode();
        header.setNext(trailer);    // faz header apontar para trailer
        trailer.setPrev(header);    // faz trailer apontar para header
        size = 0;
    }

    public int size(){
        return size;
    }

    public boolean isEmpty(){
        if (header==null)
            return true;
        return false;
    }

    public Object first(){
        if(isEmpty())
            throw new RuntimeException("Deque está vazio.");
        return header.getNext().getElement();
    }

    public Object last(){
        if(isEmpty())
            throw new RuntimeException("Deque está vazio.");
        return trailer.getPrev().getElement();
    }

    public void insertFirst( Object elem){
        DLNode second = header.getNext();
        DLNode first = new DLNode(elem,header, second);
        second.setPrev(first);
        header.setNext(first);
        size++;
    }

    public void insertLast( Object elem){
        DLNode second = trailer.getPrev();
        DLNode first = new DLNode(elem,header, second);
        second.setPrev(first);
        header.setNext(first);
        size++;
    }
}

```

