

# *Praktikum Programmieren*

## **Aufgabenblatt 4 - Entwurf**

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Adrian Helberg, Rodrigo Ehlers , Gruppe 2

**Prüfer: Prof. Dr. Bernd Kahlbrandt**

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Collections

Denksportaufgaben

# Collections - Interface Deque

## ► Stack-artig

```
/**
 * Pushes an item onto the top of the stack
 * @param item the item to be pushed onto this stack
 */
void push(E item);

/**
 * Removes the object at the top of this stack and
 * returns that object
 * @throws EmptyStackException
 */
void pop() throws EmptyStackException;
```

# Collections - Interface Deque

```
/**
 * Looks at the object at the bottom of this stack
 * without removing it from the stack
 * @return the object at the bottom of this stack
 * @throws NoSuchElementException if this queue is
 * empty
 */
E peekLast() throws NoSuchElementException;
```

# Collections - Interface Deque

## ► Queue-artig

```
/**
 * Enqueue the item
 * @param item to add
 * @throws NullPointerException if the specified item
 * is null
 */
void enqueue(E item) throws NullPointerException;

/**
 * Dequeue the item
 * @throws NoSuchElementException
 */
void dequeue() throws NoSuchElementException;
```

# Collections - Interface Deque

```
/**  
 * Looks at the object at the top of this stack without  
 * removing it from the stack  
 * @return the object at the top of this stack  
 * @throws NoSuchElementException if this queue is  
 * empty  
 */  
E peekFirst() throws NoSuchElementException;
```

# Collections - Interface Deque

## ► Methode isEmpty()

```
/**  
 * Tests if this stack is empty  
 * @return true if and only if this stack contains  
 * no items; false otherwise  
 */  
boolean isEmpty();
```

# Collections - Interface Deque

## ► NULL-Handling

```
/**
 * Checks for NULL; does not allow NULL
 * @param data data to check
 * @throws NullPointerException if data is null
 */
default void checkNull(E data)
                        throws NullPointerException {
    if (data == null) {
        throw new NullPointerException(
            "Null not allowed"
        );
    }
}
```



# Denksportaufgaben

1. Geben Sie bitte Deklarationen für die Variablen `x` und `i` an, für die

```
x += i;
```

laga ist, aber

```
x = x + i;
```

nicht.

```
int x = 1;  
long y = 1;  
x += y;
```

*Finden Sie bitte die Begründung in der JLS, warum das zweite Konstrukt nun funktioniert und erklären Sie dies!*

## *5.4. String Conversion*

**String conversion applies only to an operand of the binary `+` operator which is not a `String` when the other operand is a `String`.**

**In this single special case, the non-`String` operand to the `+` is converted to a `String` (§5.1.11) and evaluation of the `+` operator proceeds as specified in §15.18.1.**

# Denksportaufgaben

Schreiben Sie bitte eine Klasse A, so dass der Konstruktor der folgenden Klasse B „Win“ ausgibt!

```
[...]  
new B(Long.MAX_VALUE);  
  
class A {  
    A Long = this;  
  
    int compare(Long a, Long b) {  
        return 1;  
    }  
  
    class B {  
        B (Long i) {}  
    }  
}
```