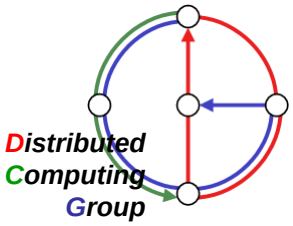
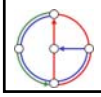
JAVA TUTORIAL



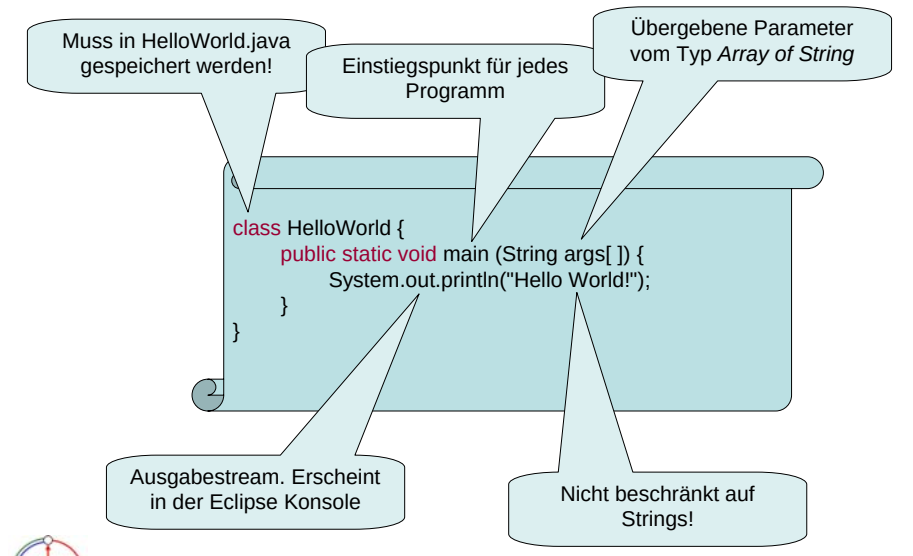
Vernetzte Systeme - SS 06

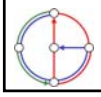
Übersicht

- Warum Java?
  - Interoperabilität
  - grosse und gut dokumentierte Library
  - weit verbreitet
  - Syntax sehr nahe an C
  - Erfahrung: Java wird gegenüber Oberon / Eiffel / C bevorzugt
- Ziel dieser Einführung
  - Die wichtigsten Konzepte verstehen
  - Bestehenden Java-Code verstehen und erweitern können
  - ~~Kompletter Überblick über alle Java-Features?~~
  - ~~Ganze Java-Programme selber schreiben können?~~

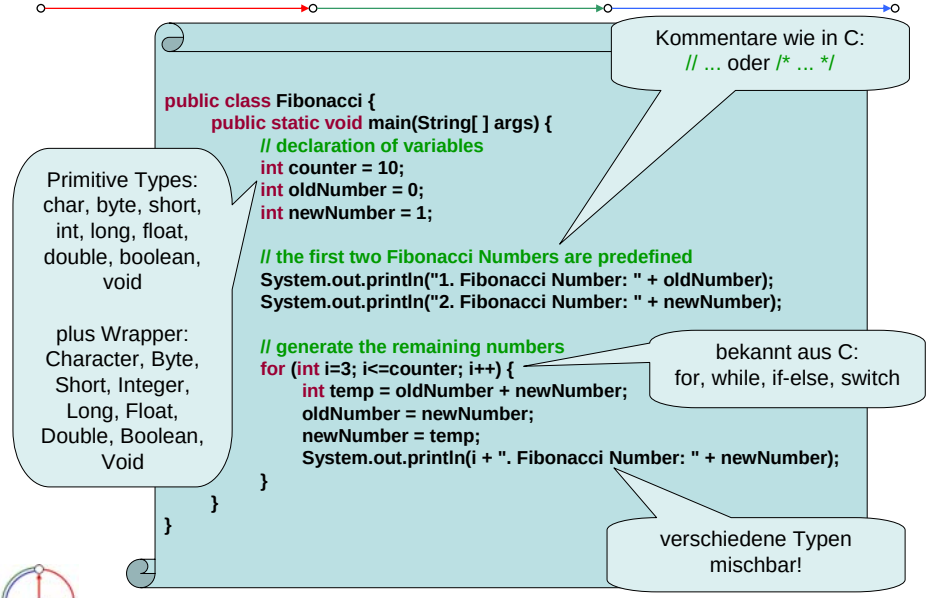


1 – Hello World





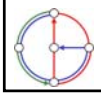
2 – Fibonacci



3 – Fibonacci extended

```
public class Fibonacci {
    public static void main(String[ ] args) {
        // declaration of variables
        int counter = 10;
        int oldNumber = 0;
        int newNumber = 1;

        // parse counter value
        counter = Integer.parseInt(args[0]);
        System.out.println("Printing the first " + counter + " numbers:");

        // the first two Fibonacci Numbers are predefined
        System.out.println("1. Fibonacci Number: " + oldNumber);
        System.out.println("2. Fibonacci Number: " + newNumber);

        // generate the remaining numbers
        for (int i=3; i<=counter; i++) {
            int temp = oldNumber + newNumber;
            oldNumber = newNumber;
            newNumber = temp;
            System.out.println(i + ". Fibonacci Number: " + newNumber);
        }
    }
}
```

Da kann einiges schief gehen!!

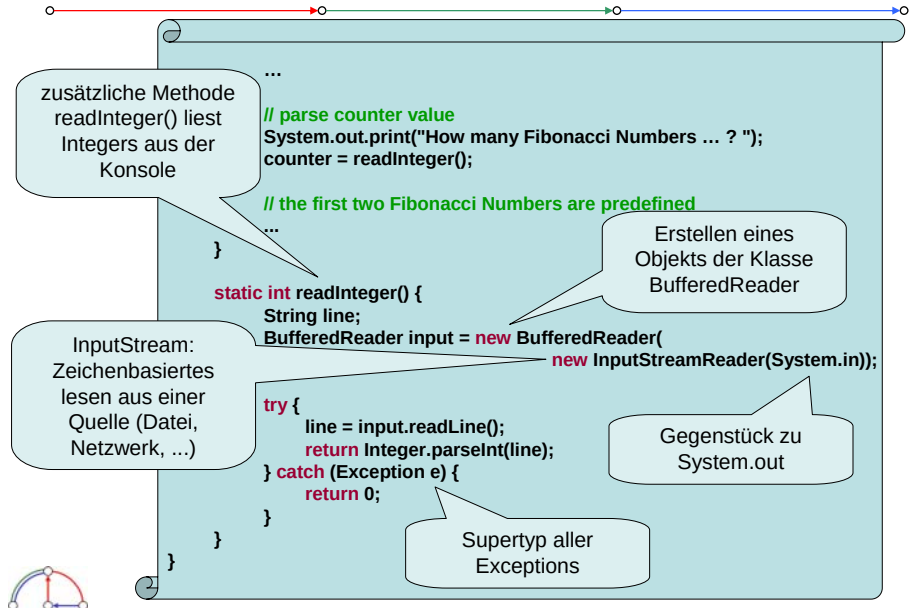


3 – Fibonacci extended

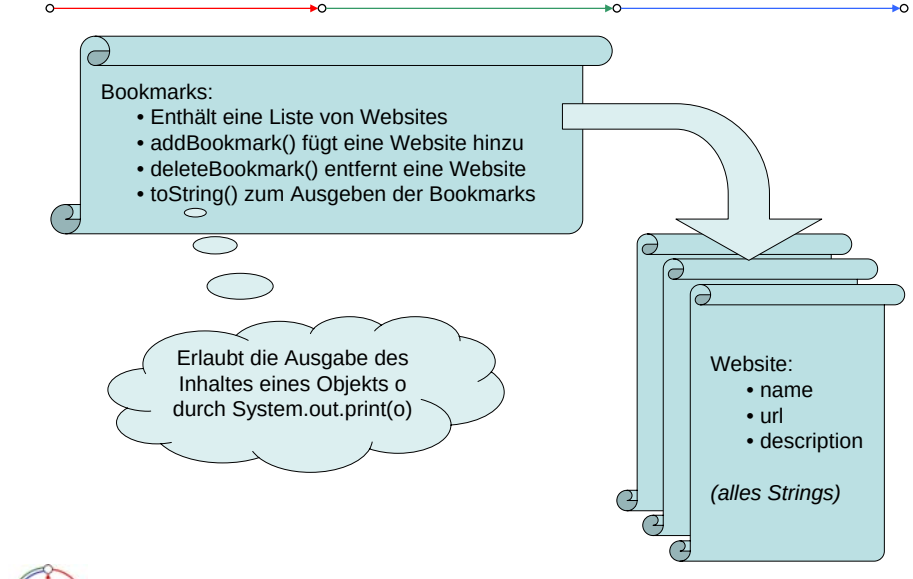
```
...

// parse counter value
try {
    counter = Integer.parseInt(args[0]);
} catch (NumberFormatException e) {
    System.out.println("Sorry, first argument must be a number");
    return;
} catch (ArrayIndexOutOfBoundsException e) {
    System.out.println("Usage: java Fibonacci <number>");
    return;
}
System.out.println("Printing the first " + counter + " numbers:");

// the first two Fibonacci Numbers are predefined
System.out.println("1. Fibonacci Number: " + oldNumber);
System.out.println("2. Fibonacci Number: " + newNumber);

...
```

Exceptions aus dem try-Block

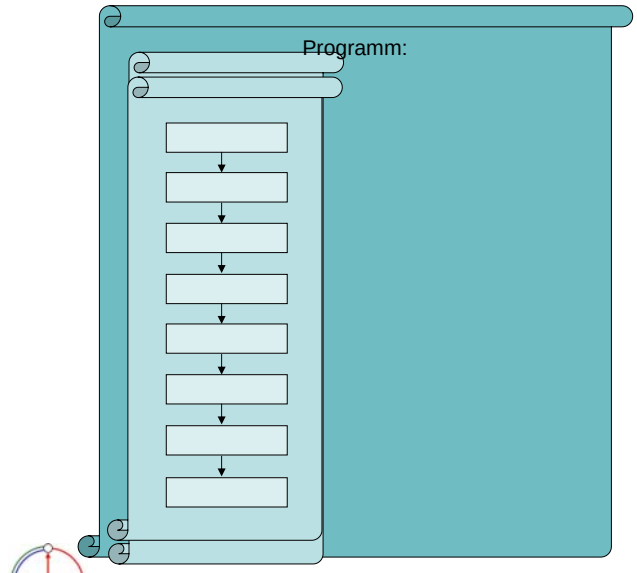
4 – Fibonacci even more extended

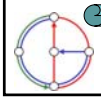


5 – Bookmark Verwaltung

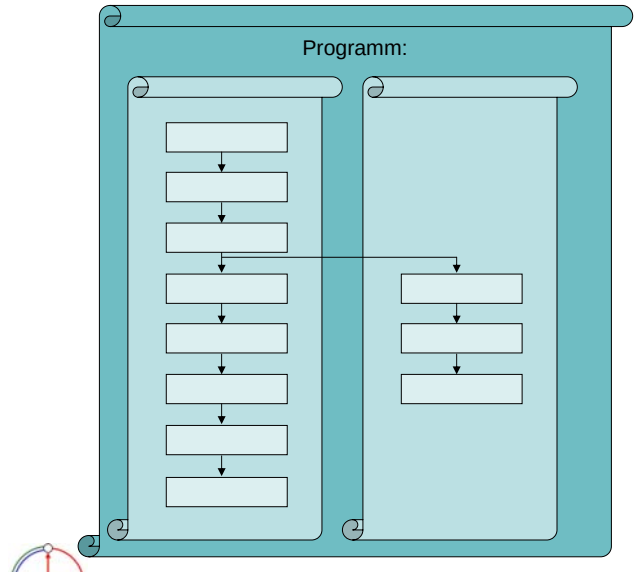


6 – Threads





6 – Threads



Beispiele:

Berechnung im Hintergrund, ohne das GUI zu blockieren.

Jede Anfrage wird in einem separaten Thread abgearbeitet.

Ein Thread bearbeitet ankommende Nachrichten, ein zweiter sendet neue Nachrichten.

Koordination von Threads kann kompliziert und fehleranfällig werden!

That‘s it!

Fragen?

Freitag, 13.15-15.00, ETZ F76.1