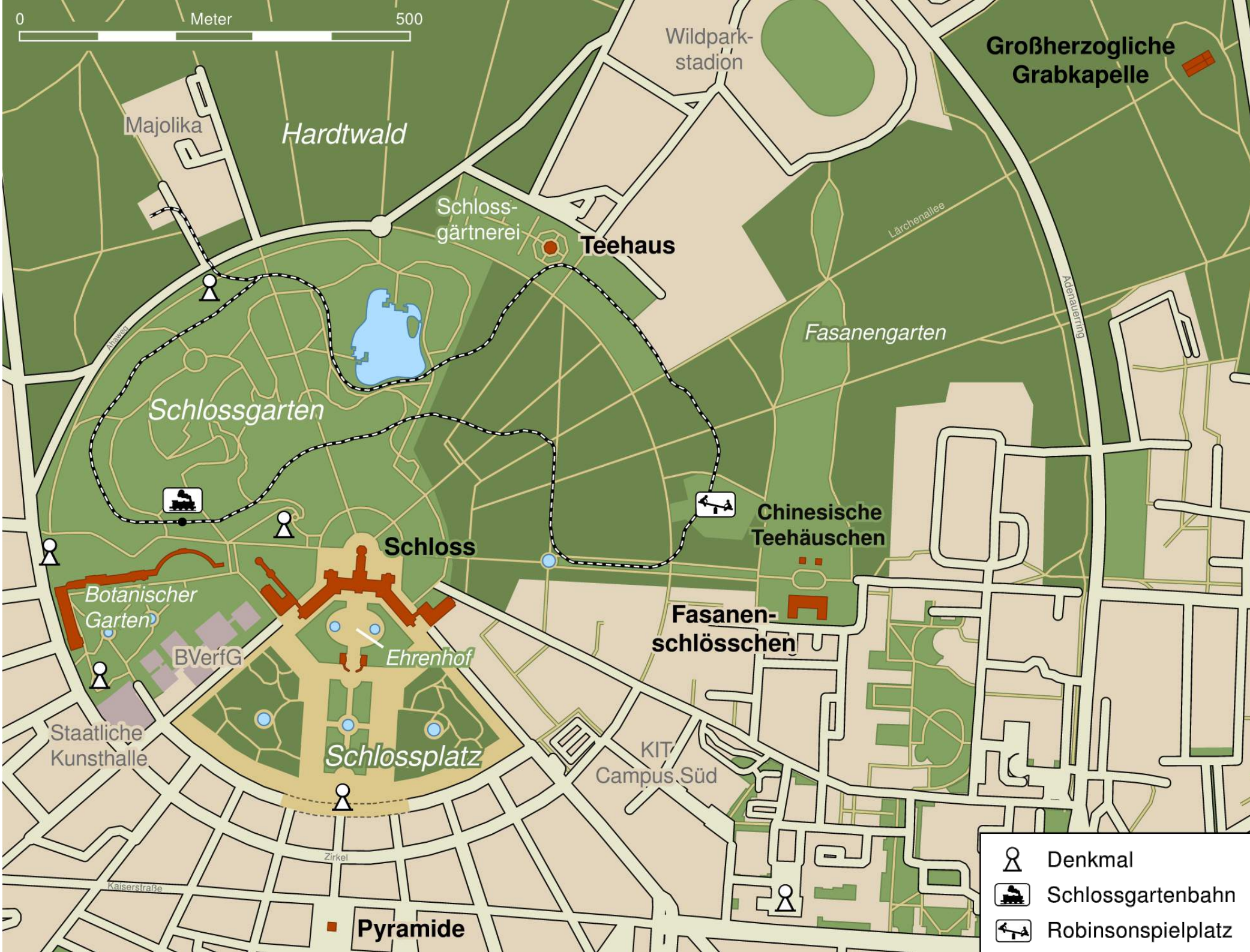





Value Objects - The Next Big Thing for Java

0 Meter 500



-  Denkmal
-  Schlossgartenbahn
-  Robinsonspielplatz

www.entwicklertag.de

2015

Sponsoren



Organisation



Veranstalter



#etka15



Foto: A. Markiewicz

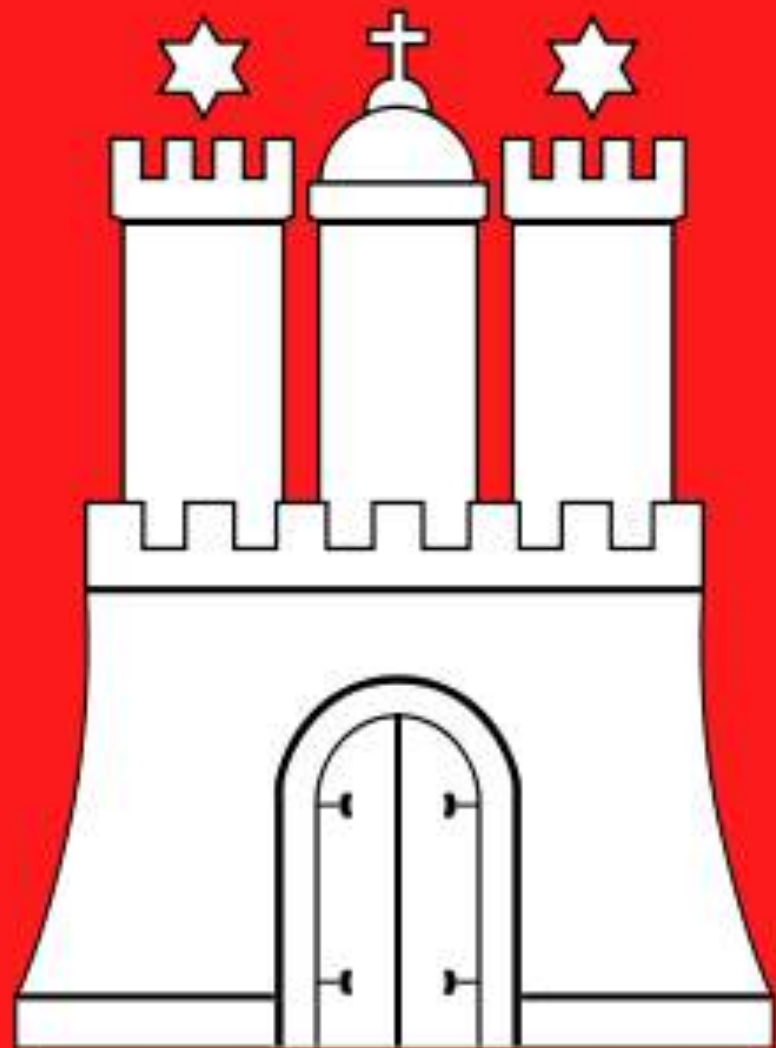
HENNING

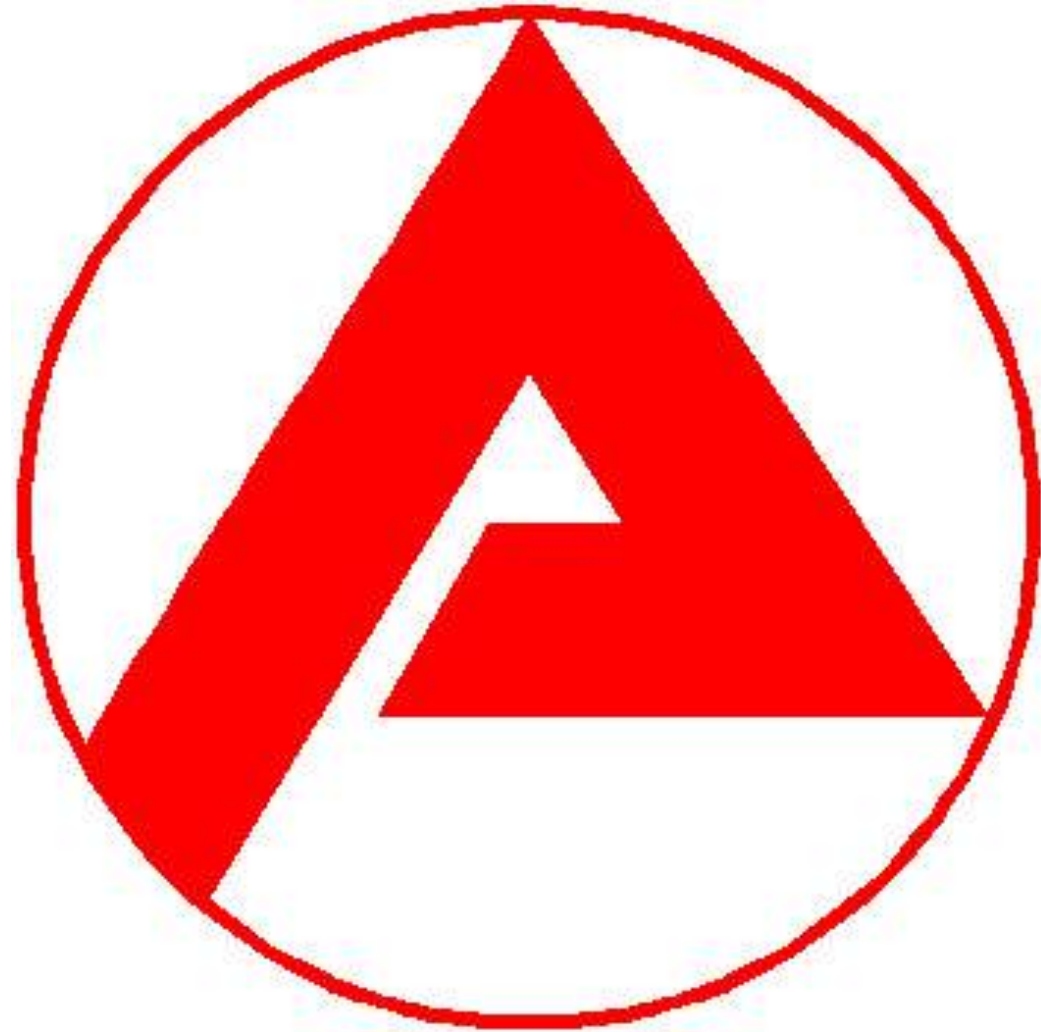
SCHWENTNER





WORKPLACE
SOLUTIONS









WORKPLACE
SOLUTIONS



Foto: J. Rost

A group of people are gathered in a meeting room. A man in a dark jacket is pointing at a whiteboard. Other people are standing around the room, some looking at the whiteboard. The room has a whiteboard and a door in the background.

Agil

A group of people in a meeting room, with the word 'SCRUM' overlaid in large green letters. The background shows several individuals standing and talking in a professional setting, possibly a conference room or office. The word 'SCRUM' is written in a bold, green, sans-serif font with a slight 3D effect, centered over the image.

SCRUM

A group of approximately seven people are gathered around a long table in a meeting room. One man with a beard is pointing at a whiteboard or screen at the far end of the table. The room has a textured wall and a blue door in the background. A large, bold, red 'XP' is overlaid on the lower-left portion of the image.

XP



Java

C#





razorfish

WILL CODE
ABANDON FOR
FOOD
PLEASE HELP
GOD BLESS YOU



WORKPLACE
SOLUTIONS

WERBUNG



me



Wir bauen unsere Crew kontinuierlich aus: Mit einem abgeschlossenen Studium der (Wirtschafts-) Informatik oder Erfahrung als Software-Architekt und -Techniker sind Sie bei uns genau richtig! Wir freuen uns auf Ihr Know-how zu Software-Architektur, agilem Vorgehen und arbeitsplatzbezogener Geschäftsprozessmodellierung. Mit uns werden Sie in anspruchsvollen Kundenprojekten in ganz Deutschland tätig. Zum Nutzen unserer Kunden und des WPS-Teams erweitern wir stetig unseren und Ihren Horizont.

Wir suchen IT-Berater (m/w) und IT-Spezialisten (m/w)

Unsere Kunden wissen:

WPS-Qualität steht seit 13 Jahren für Erfahrung, Engagement und Eigenverantwortung. Wo das WPS-Team eingesetzt wird, werden Probleme gelöst und der Teamgeist gestärkt.

Unsere WPS-Teams entwerfen und entwickeln komplexe Software-Architekturen und Individuallösungen mit modernen Web- und Komponenten-Technologien.

WPS-Berater (m/w) unterstützen Führungskräfte und Firmenleitungen mit umfassender Manage-

ment- und Organisationsberatung auf Basis aussagekräftiger Modellierung von Geschäftsprozessen und IT-Landschaften.

Wir arbeiten mit Hochschulen und Forschungseinrichtungen gemeinsam an praxisnahen Konzepten und tragen regelmäßig zum Stand der wissenschaftlichen Diskussion bei.

Bei allen Fragen, die über unser WPS-Know-how hinausgehen, arbeiten wir seit vielen Jahren mit Partnerfirmen zusammen.



So

16:48



Foto: St. Evans/Wikipedia



Value Objects for Java



jax®

The logo features the word "jax" in a bold, blue, lowercase sans-serif font. The letter "j" is lowercase and has a thick, rounded bottom. The "a" is lowercase and has a rounded bottom. The "x" is lowercase and has a thick, rounded bottom. The word is followed by a registered trademark symbol (®). Surrounding the text are four green lollipop-like shapes, each consisting of a circular head and a thin stick. One is positioned to the left of the "j", one is above the "a", one is below the "a", and one is to the right of the "x".

ORACLE®

λ



Java



10

“The next big thing for java
are value types!”







Java



Identität







Foto: Thomas G. Grant / Wikipedia

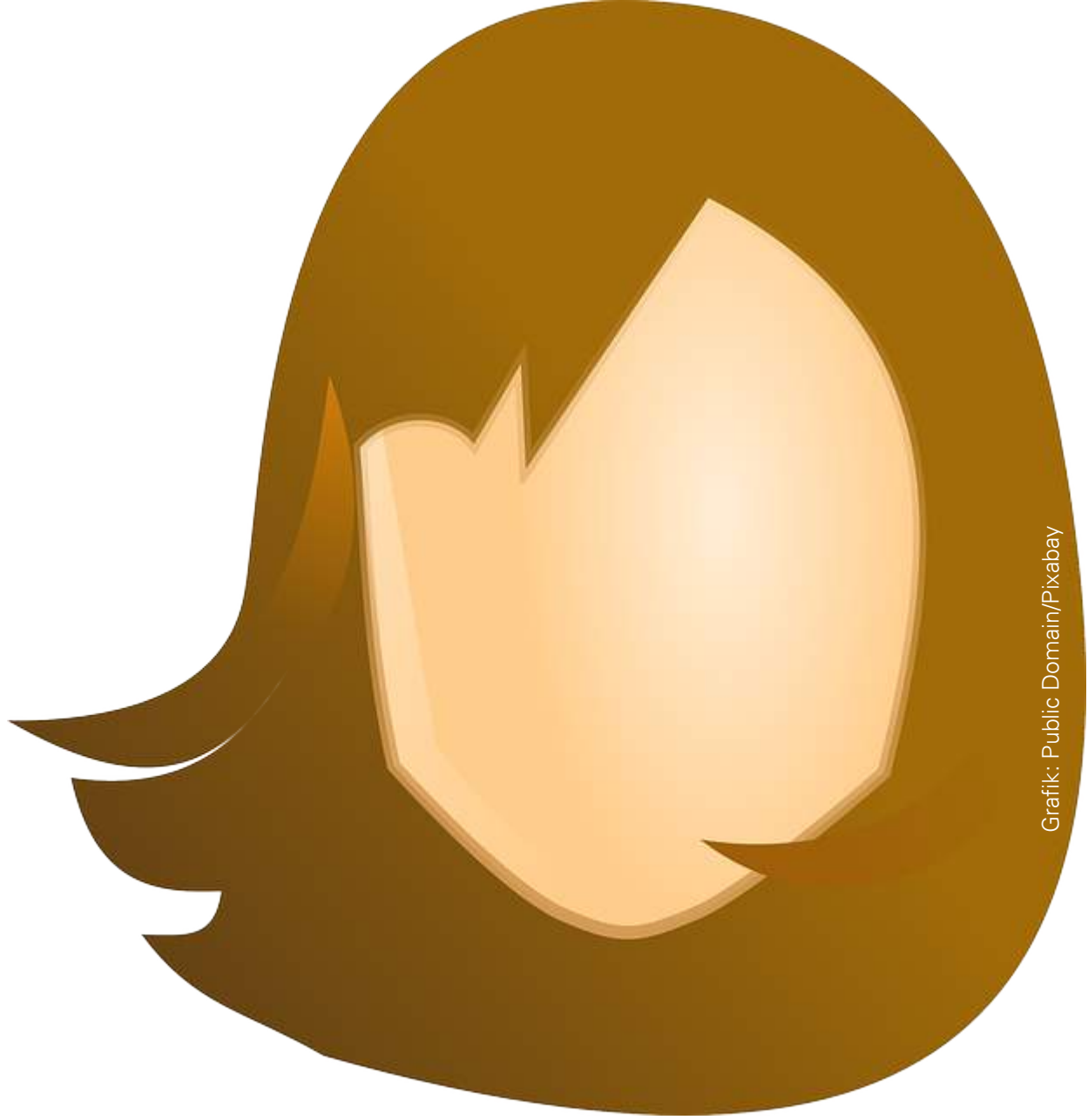


Foto: Pixabay





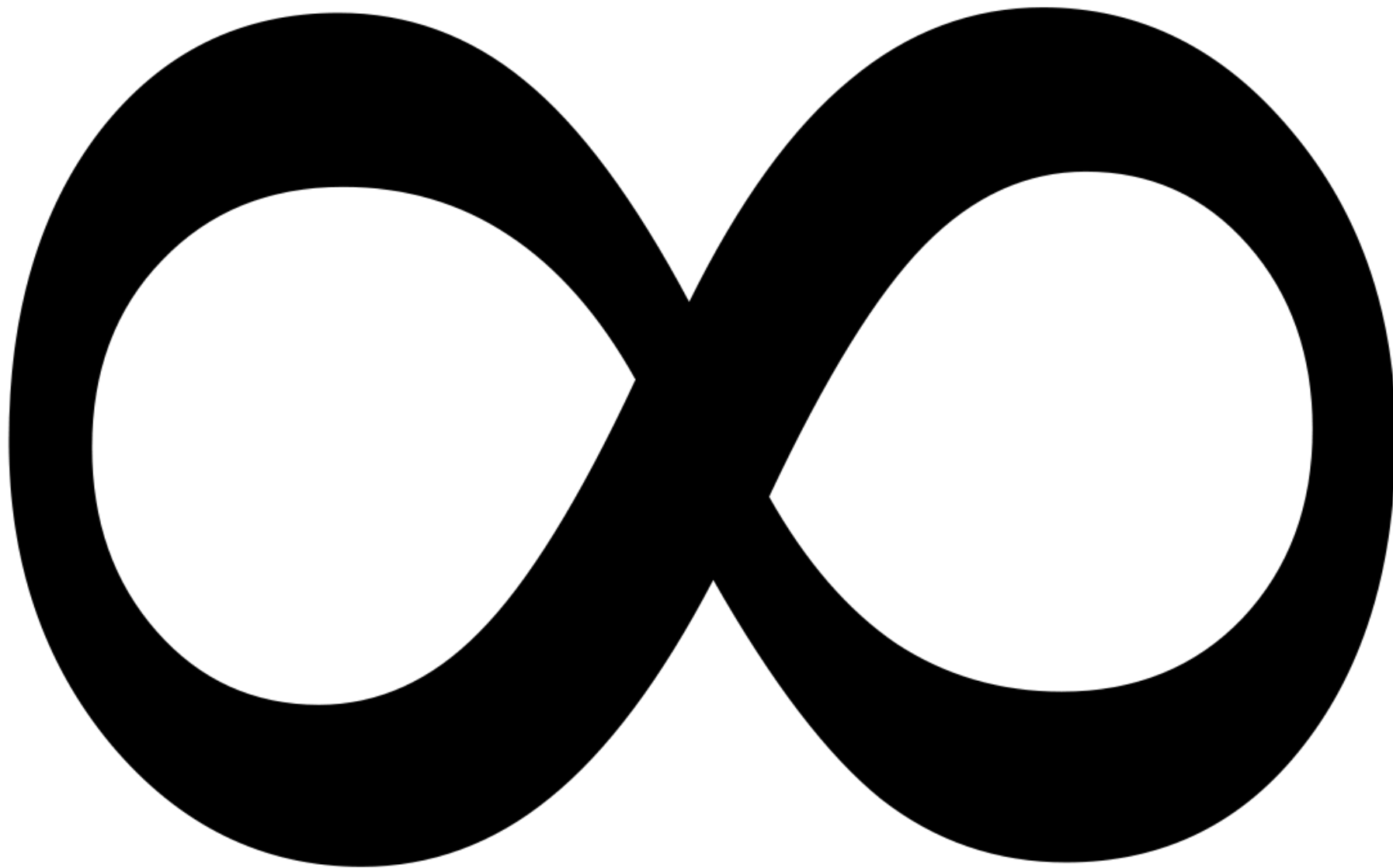
Foto: Public Domain/Pixabay



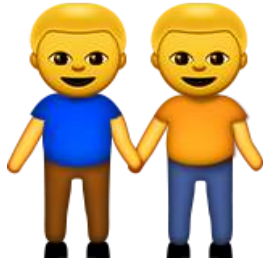
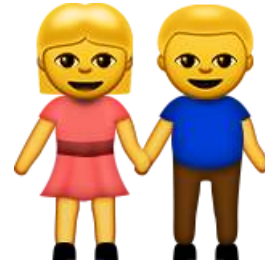
Grafik: Public Domain/Pixabay



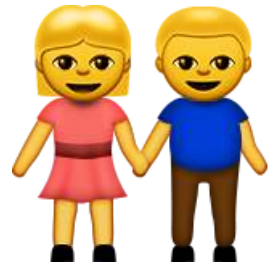




Beispiel

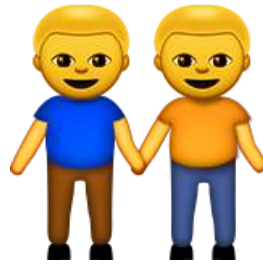
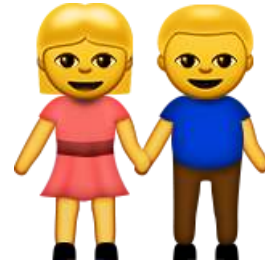
















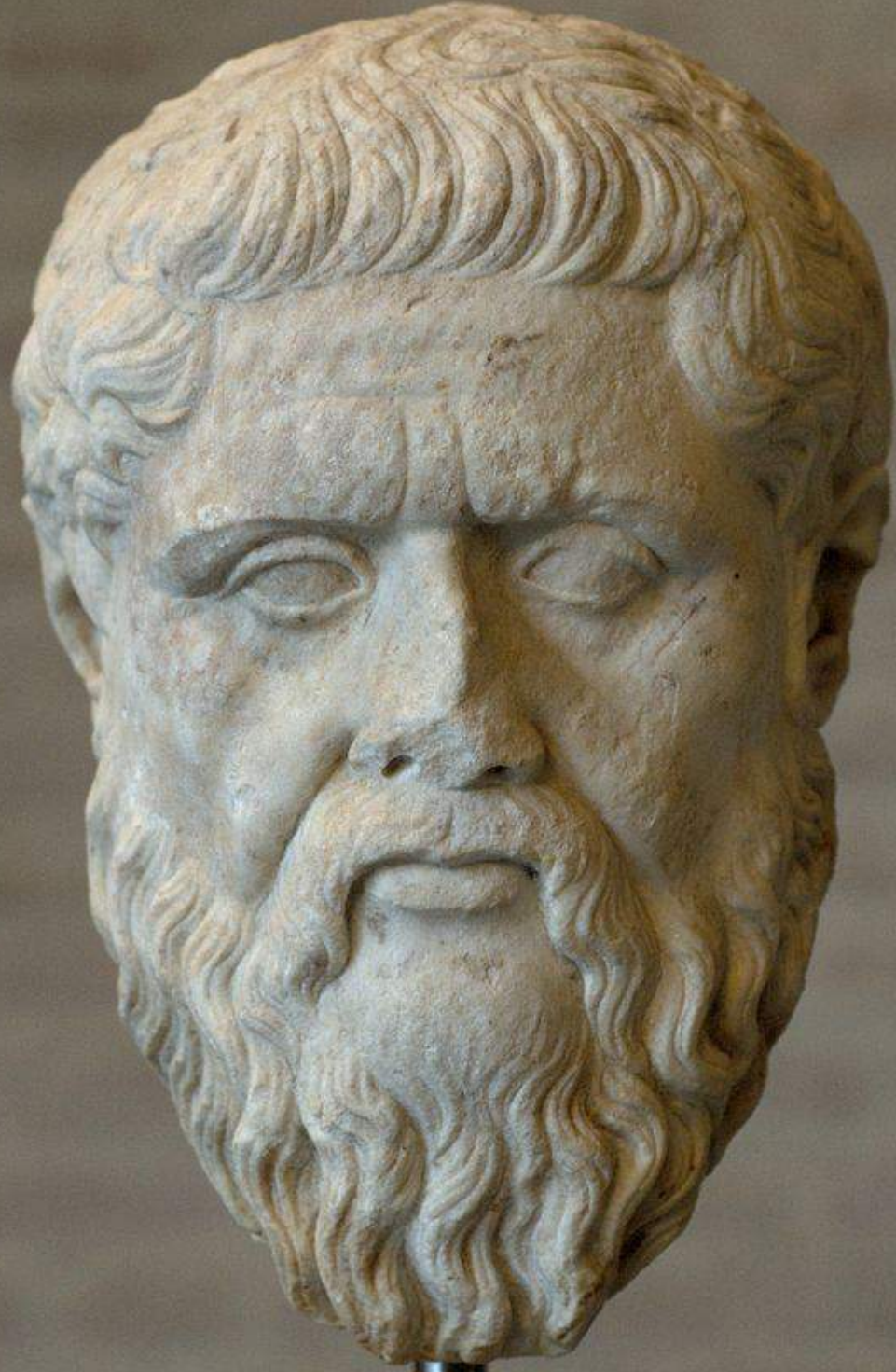


Foto: Bibi Saint-Pol/Wikipedia



Foto: Gemeinfrei/Wikipedia

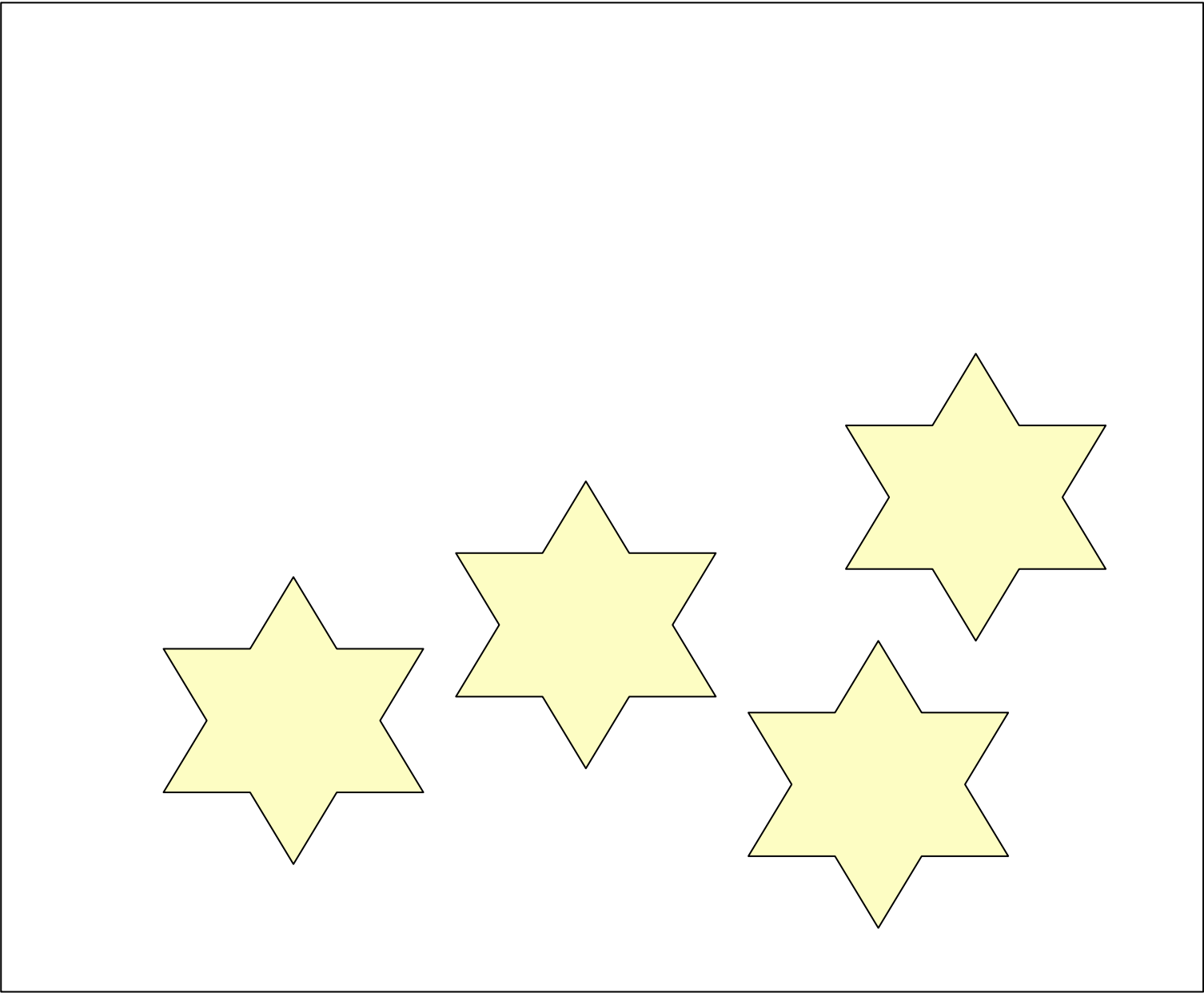


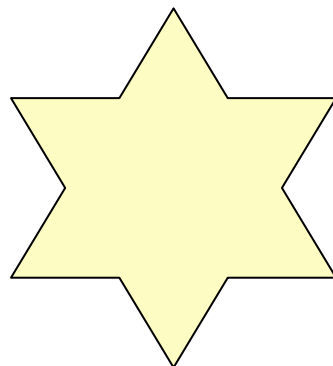
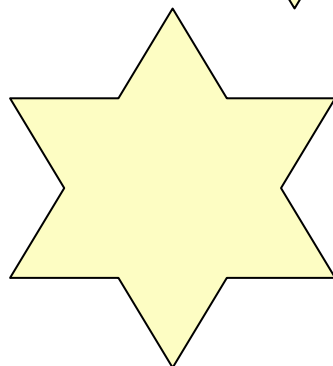
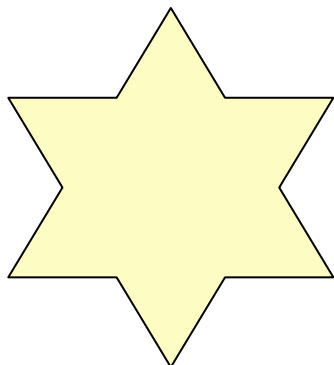
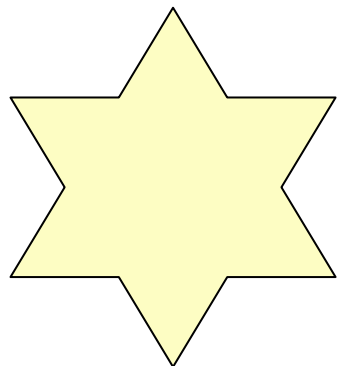
Java

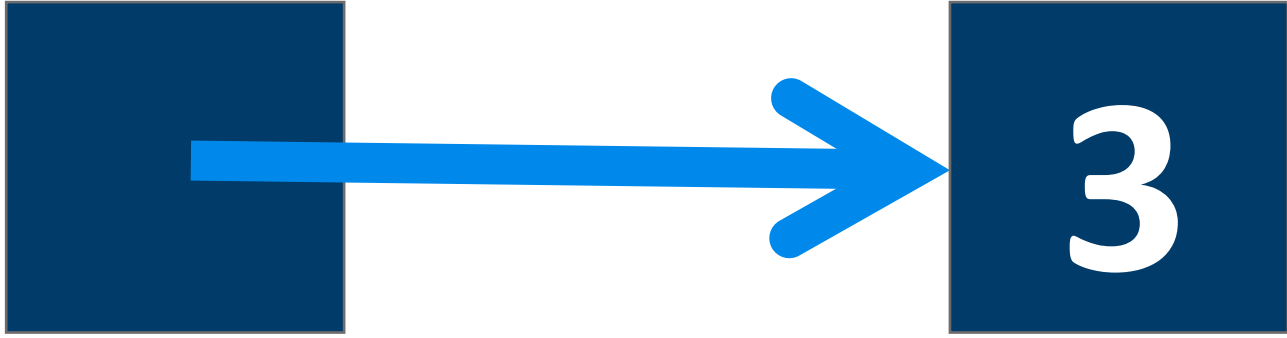


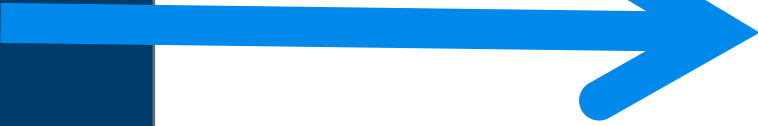
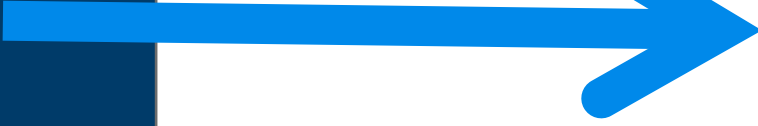
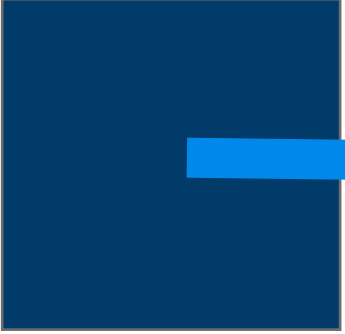


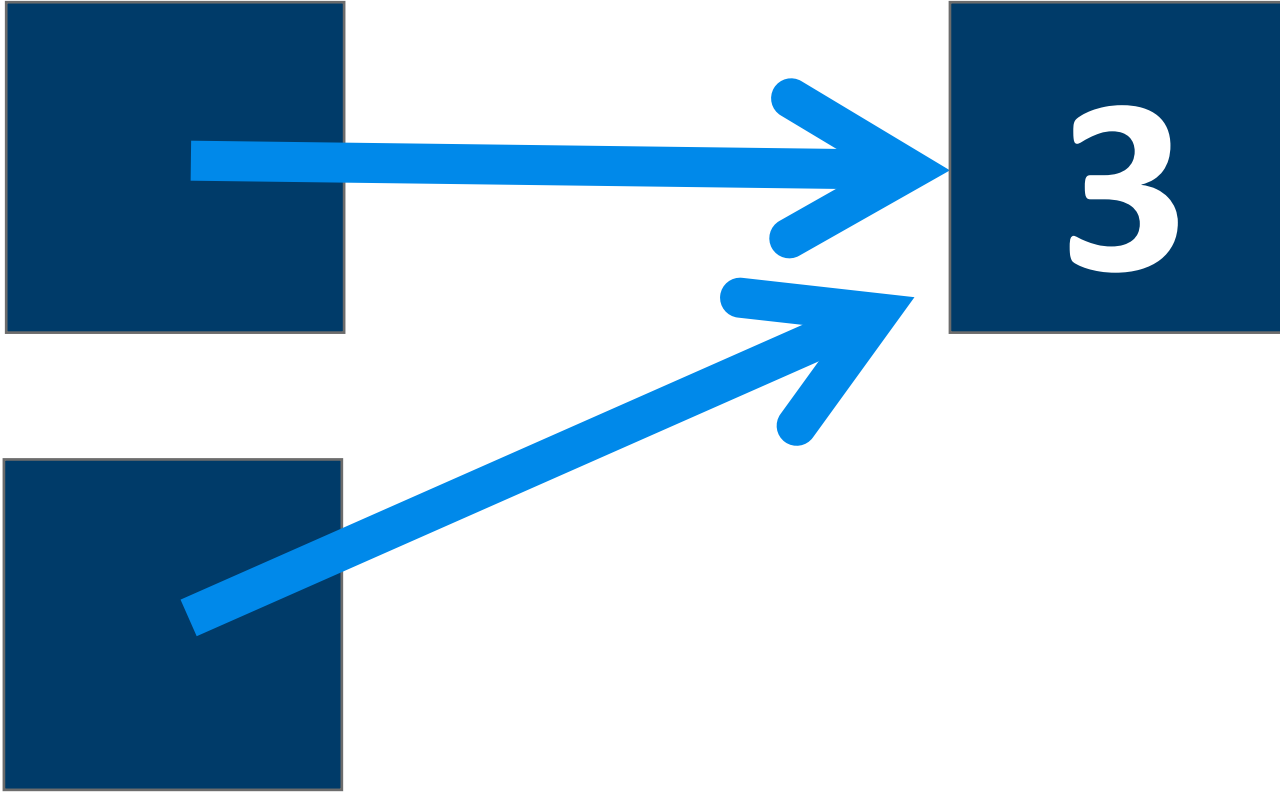












Wo lebt eigentlich
ein Objekt?









compile time



run time

Wo lebt eigentlich
ein Objekt?



Foto: Public Domain/Pixabay



3

3



int double

boolean

float

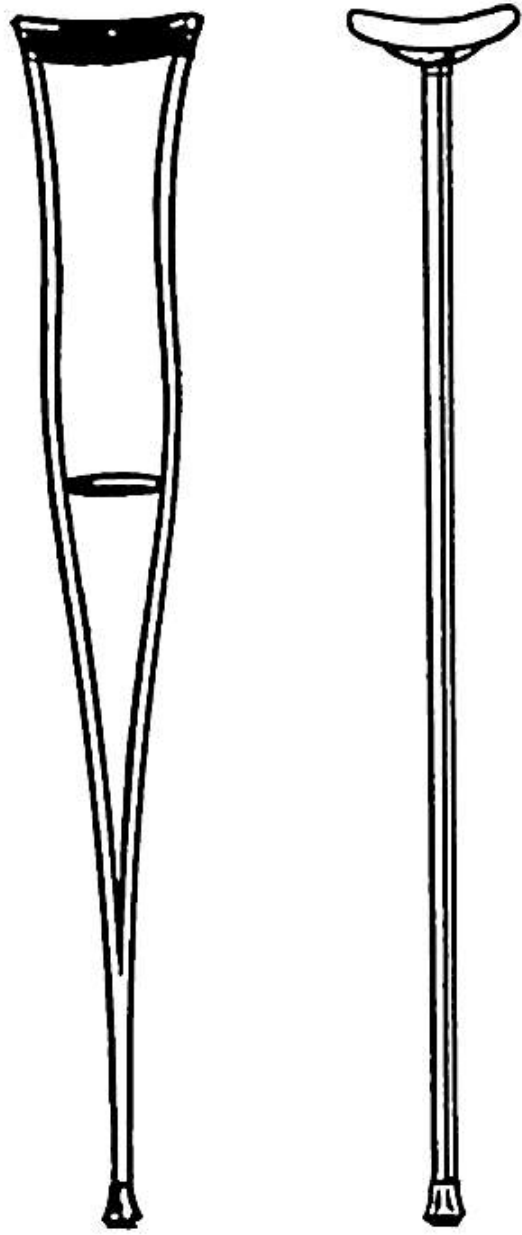
~~unsigned~~

~~complex~~

~~iban~~

~~postleitzahl~~

~~amount~~



Grafik: Gemeinfrei/Wikipedia

value-based class

Nur finale
Felder

Nur sondierende
Methoden

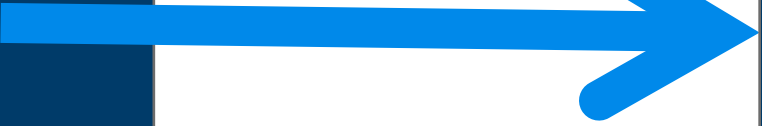
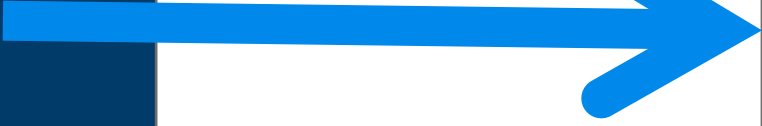
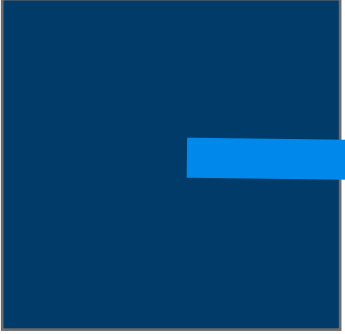
equals()

hängt nicht von

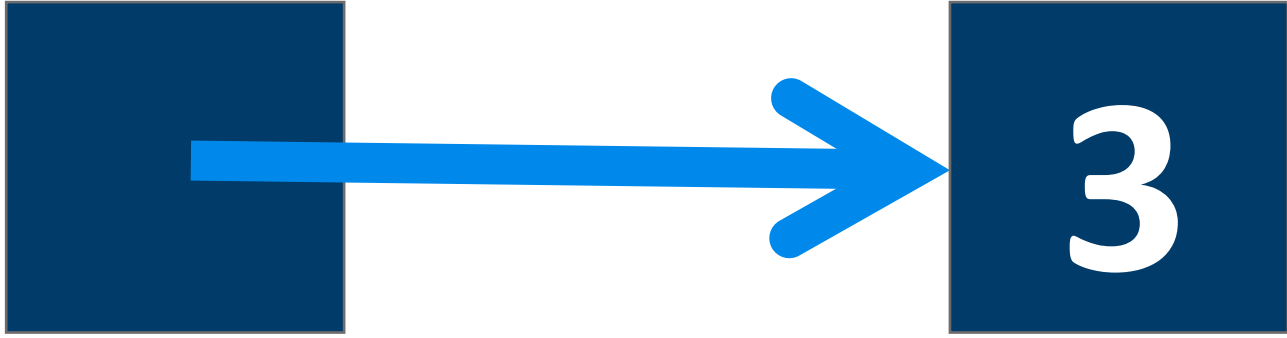
Identität ab

value-based class

ABER

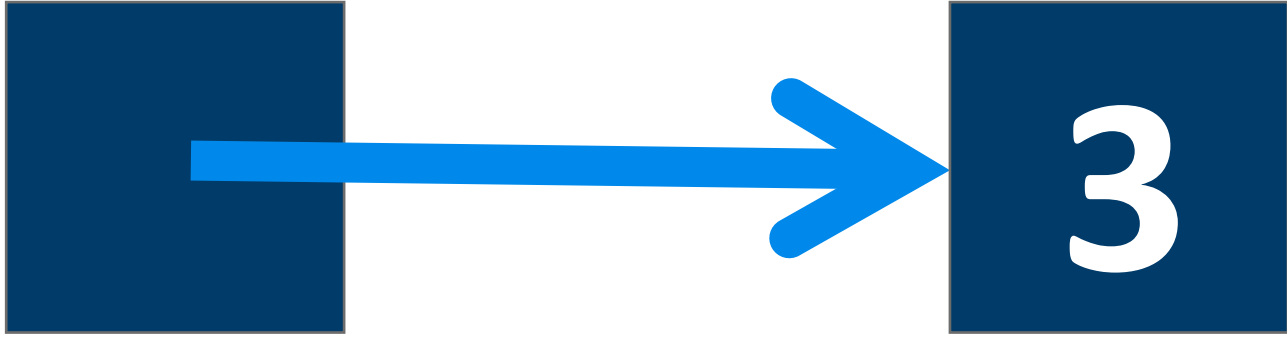






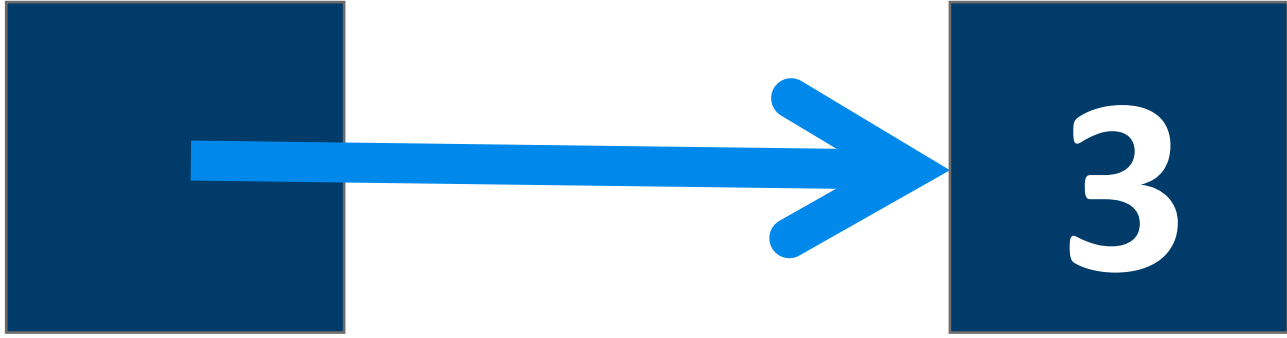
~~by value~~

by reference





Speicher * 2









```
int [ ]
```

3

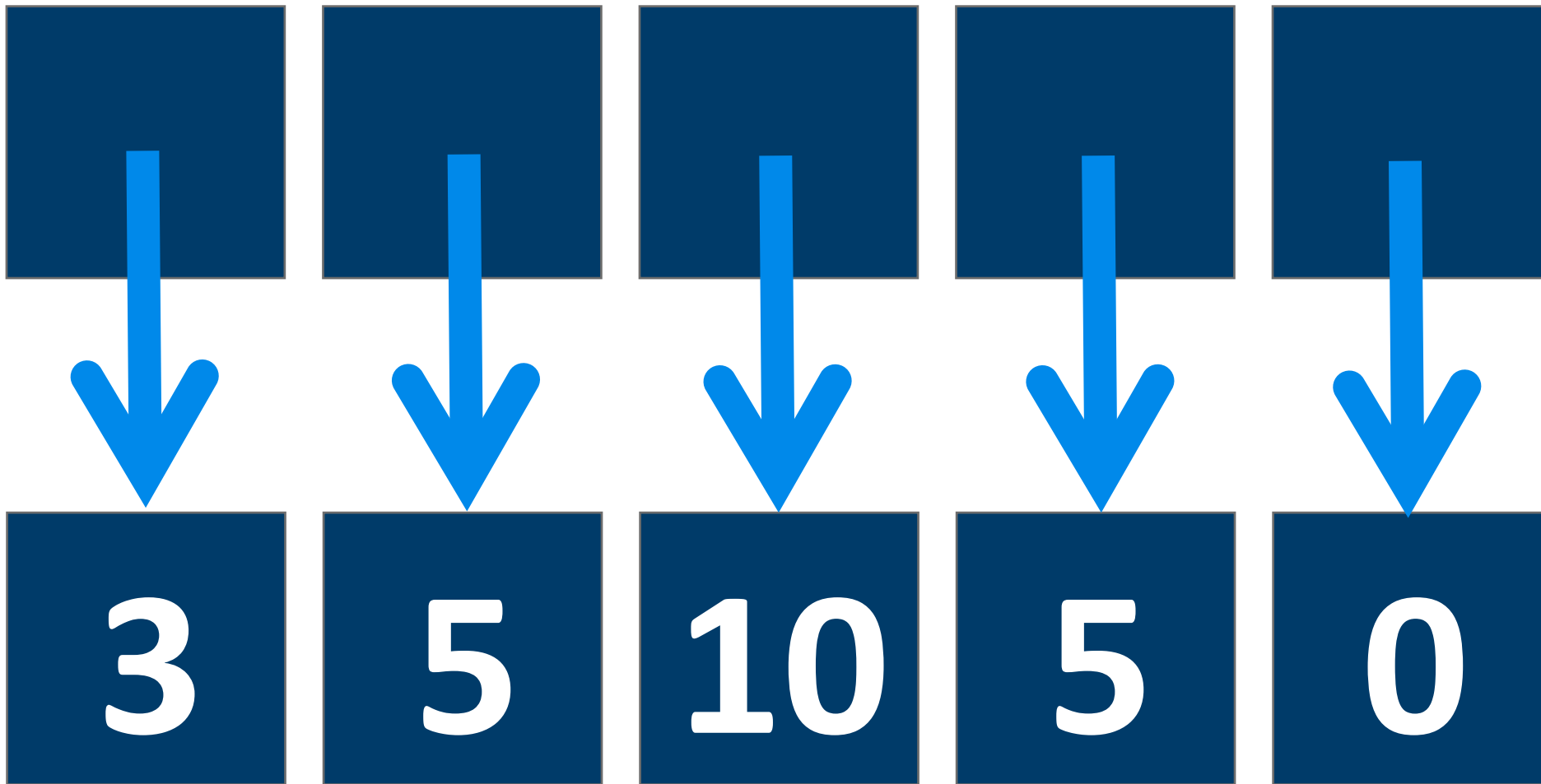
5

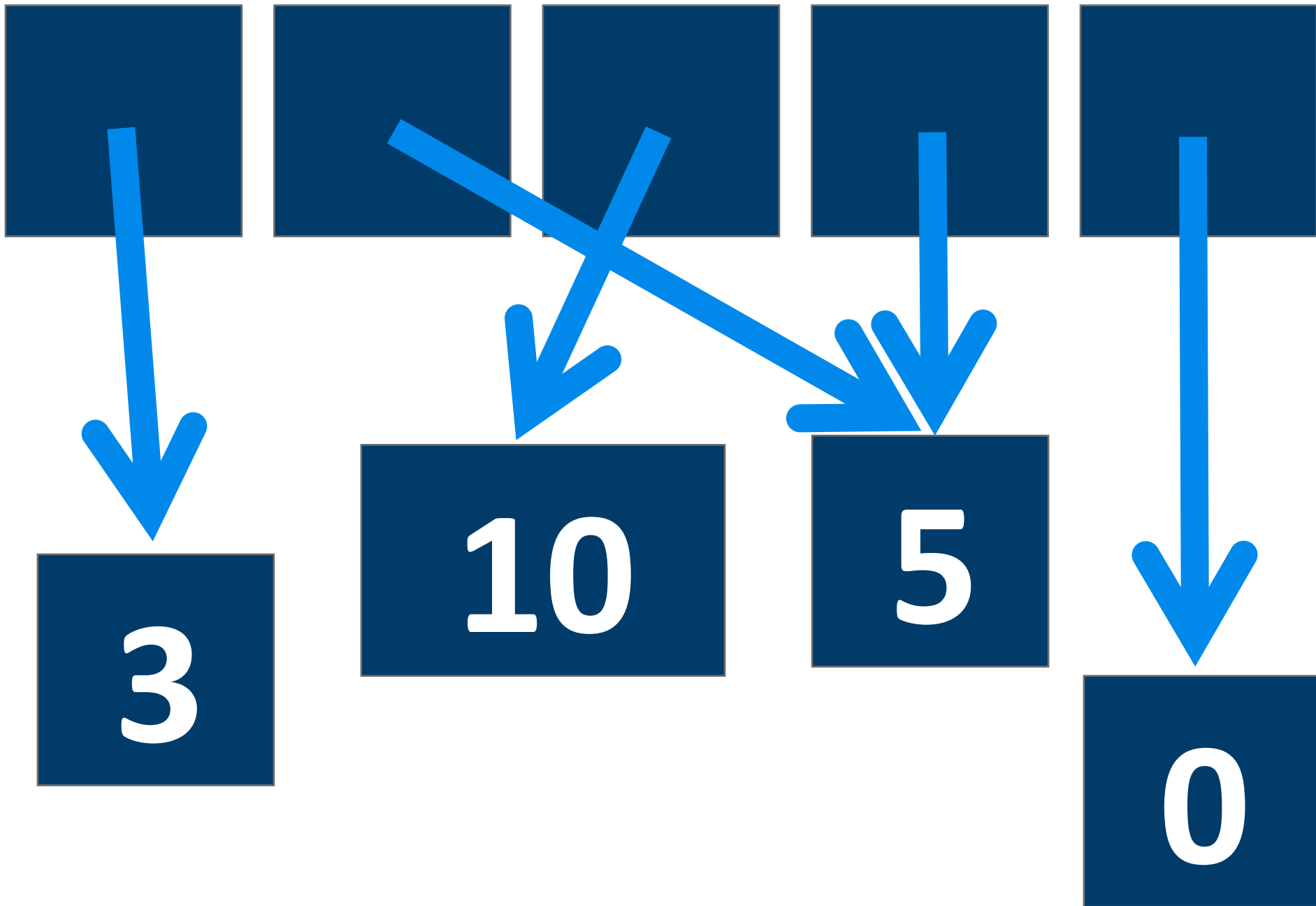
10

5

0

Object []





Die

Antwort

 **Lufthansa** First Class



ahnstraße

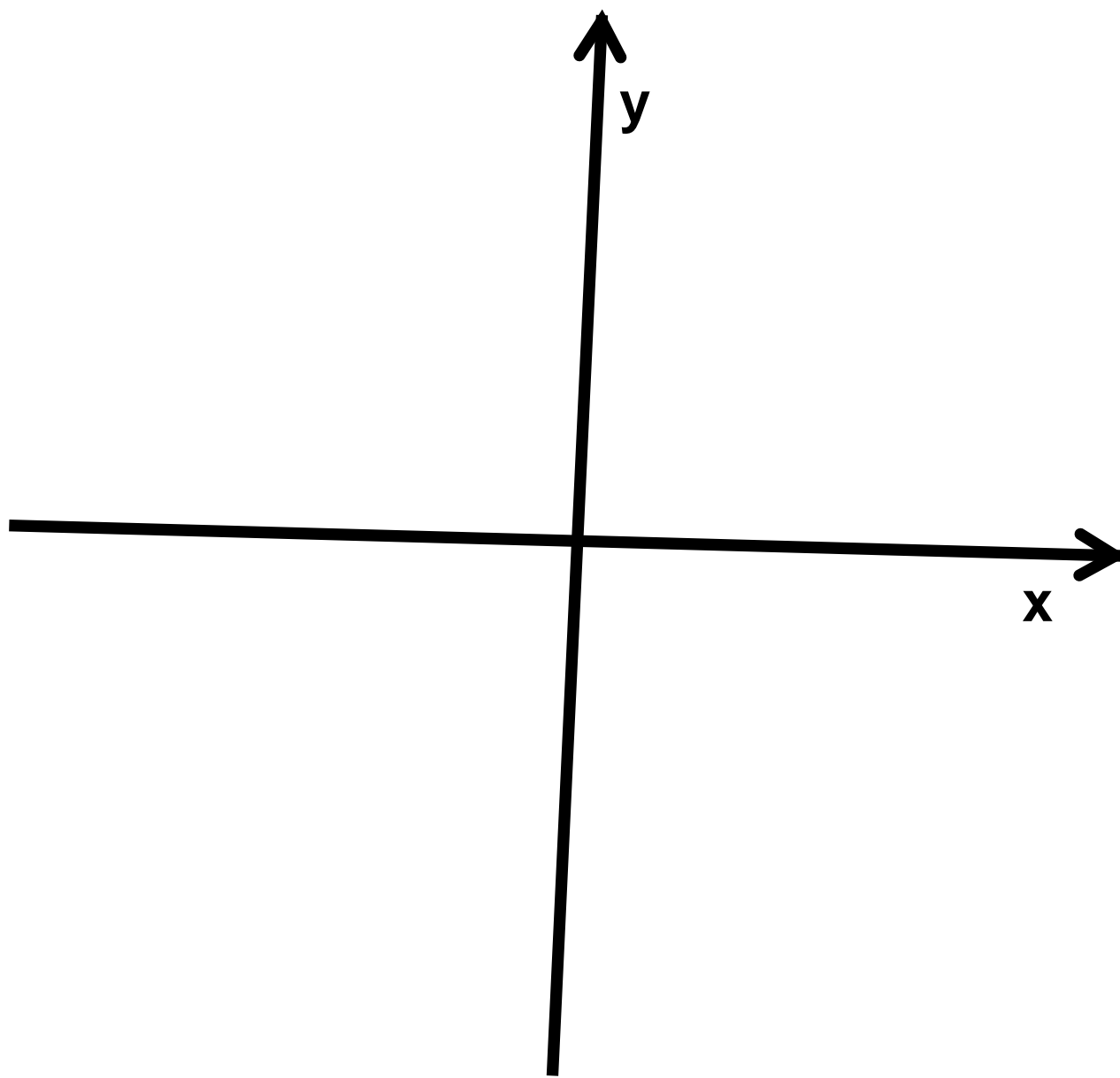


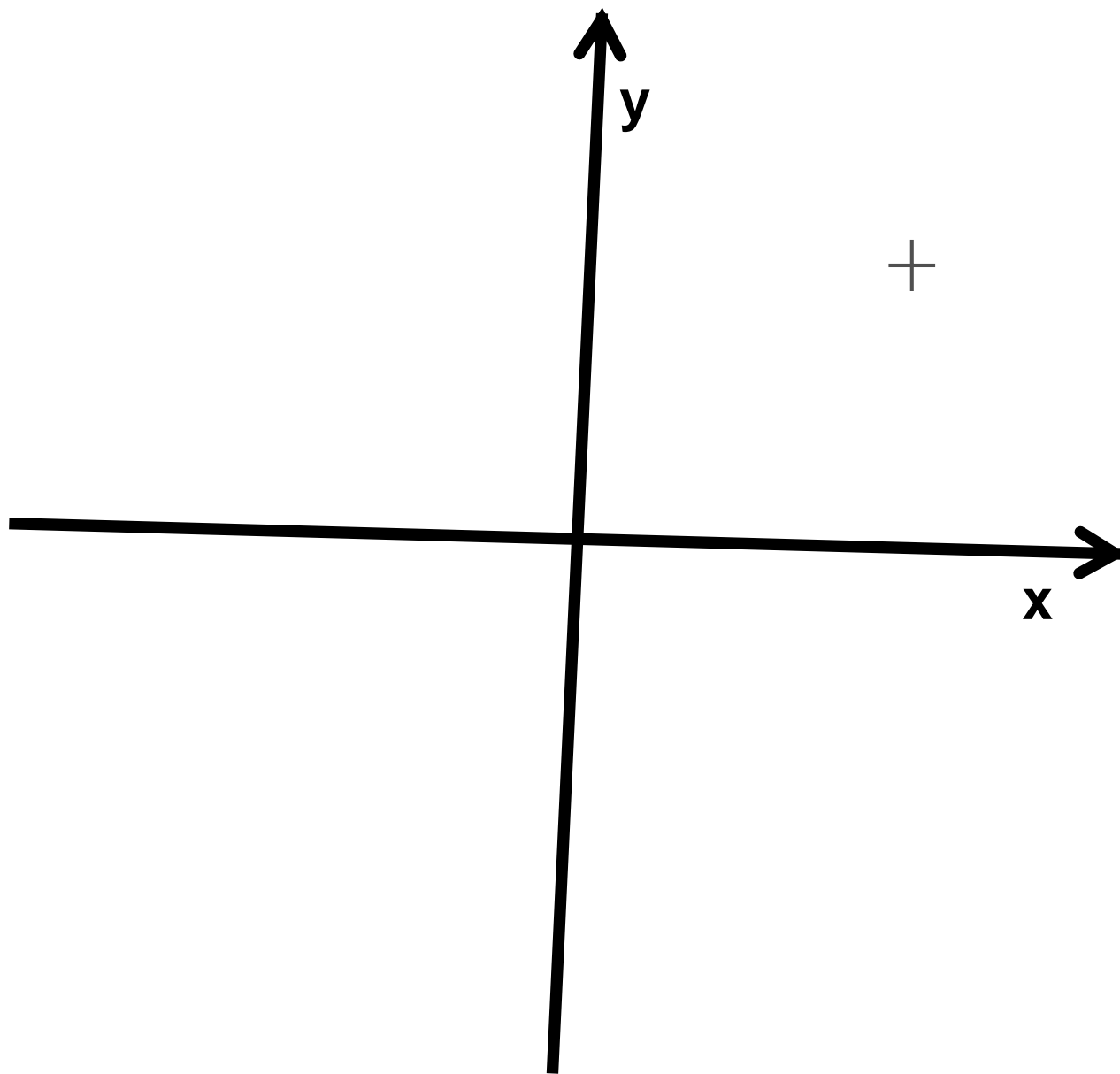
First Class



“Works like an int -
codes like a class”

Beispiel





(x, y)



Java



10





```
final __ByValue class Point {  
    private final int _x;  
    private final int _y;  
  
    public Point(int x, int y) {  
        _x = x;  
        _y = y;  
    }  
  
    public boolean equals(Point other)  
        return _x = other._x  
            && _y = other._y;  
    }  
}
```



```
final __ByValue class Point {  
    private final int _x;  
    private final int _y;  
  
    public Point(int x, int y) {  
        _x = x;  
        _y = y;  
    }  
  
    public boolean equals(Point other)  
        return _x == other._x  
            && _y == other._y;  
}
```

```
final __ByValue class Point {
    private final int _x;
    private final int _y;

    public Point(int x, int y) {
        _x = x;
        _y = y;
    }

    public boolean equals(Point other)
        return _x = other._x
            && _y = other._y;
}
```



```
final __ByValue class Point {
    private final int _x;
    private final int _y;

    public Point(int x, int y) {
        _x = x;
        _y = y;
    }

    public boolean equals(Point other)
        return _x = other._x
            && _y = other._y;
}
```

```
final __ByValue class Point {
    private final int _x;
    private final int _y;

    public Point(int x, int y) {
        _x = x;
        _y = y;
    }

    public boolean equals(Point other)
        return _x = other._x
            && _y = other._y;
}
```

```
final __ByValue class Point {
    private final int _x;
    private final int _y;

    public Point(int x, int y) {
        _x = x;
        _y = y;
    }

    public boolean equals(Point other)
        return _x = other._x
            && _y = other._y;
}
```

```
final __ByValue class Point {  
    private final int _x;  
    private final int _y;  
  
    public Point(int x, int y) {  
        _x = x;  
        _y = y;  
    }  
  
    public boolean equals(Point other)  
        return _x == other._x  
            && _y == other._y;  
}
```

```
final __ByValue class Point {  
    private final int _x;  
    private final int _y;  
  
    public Point(int x, int y) {  
        _x = x;  
        _y = y;  
    }  
  
    public boolean equals(Point other)  
        return _x = other._x  
            && _y = other._y;  
}
```



```
final __ByValue class Point {
    private final int _x;
    private final int _y;

    public Point(int x, int y) {
        _x = x;
        _y = y;
    }

    public boolean equals(Point other)
        return _x = other._x
            && _y = other._y;
}
```

```
final __ByValue class Point {  
    private final int _x;  
    private final int _y;  
  
    public Point(int x, int y) {  
        _x = x;  
        _y = y;  
    }  
  
    public boolean equals(Point other)  
        return _x = other._x  
            && _y = other._y;  
    }  
}
```

“Works like an int –
codes like a class”

“Works like an int –
codes like a class”

```
Point p = __MakeValue(4, 7);
```

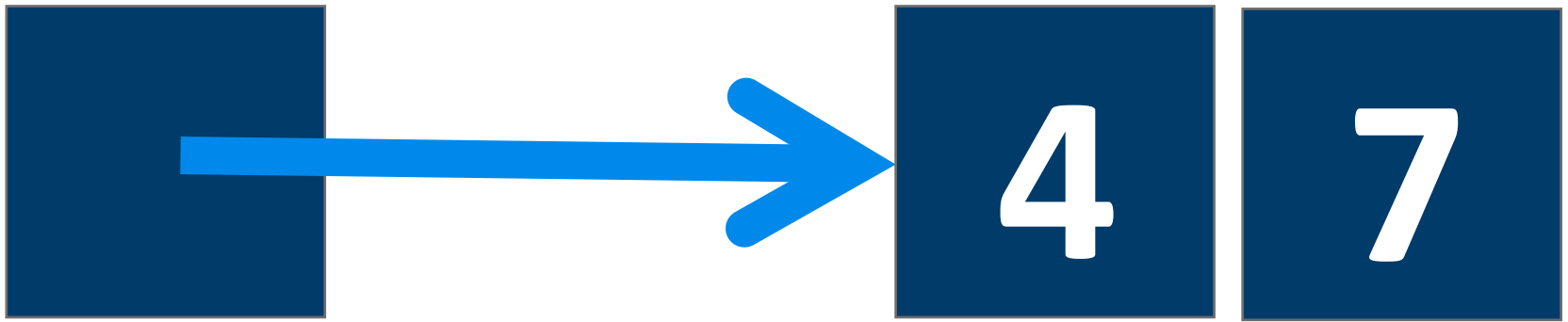
```
Point p = __MakeValue(4, 7);
```

```
Point p = new Point(4, 7);
```

```
Point p = Point(4, 7);
```

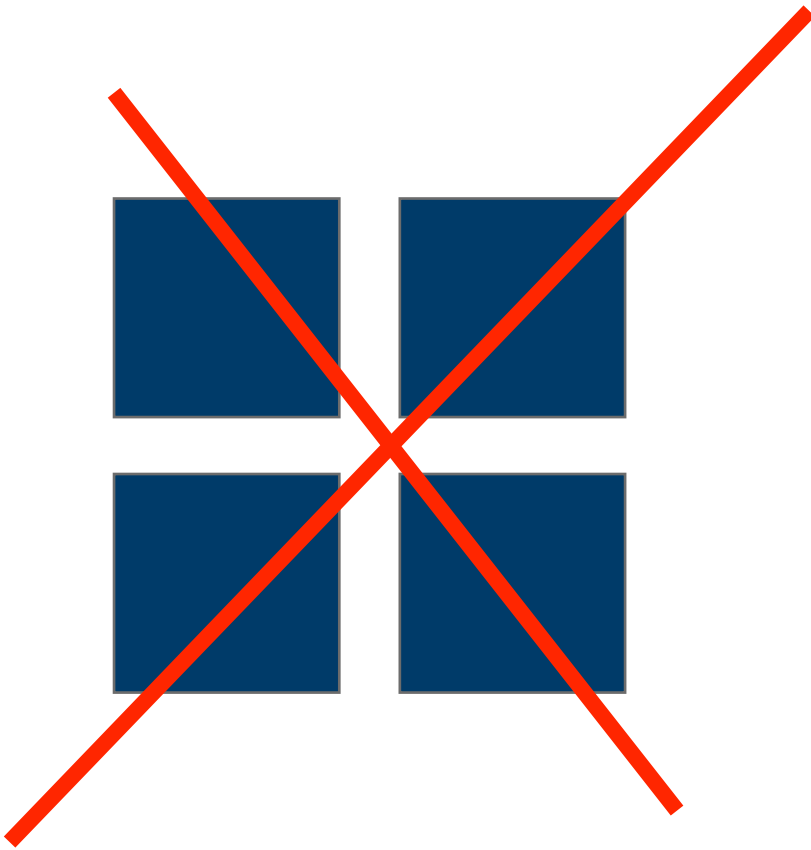


```
Point p = (4, 7);
```

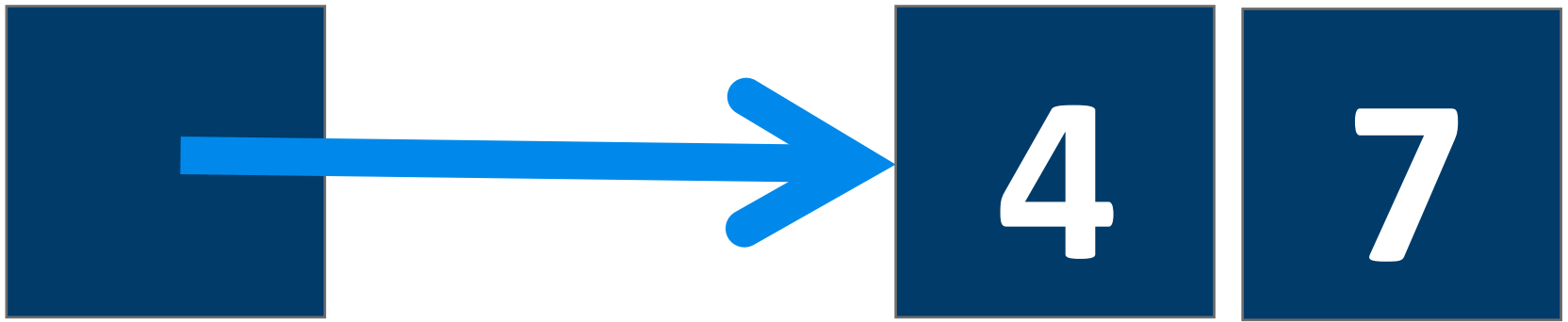


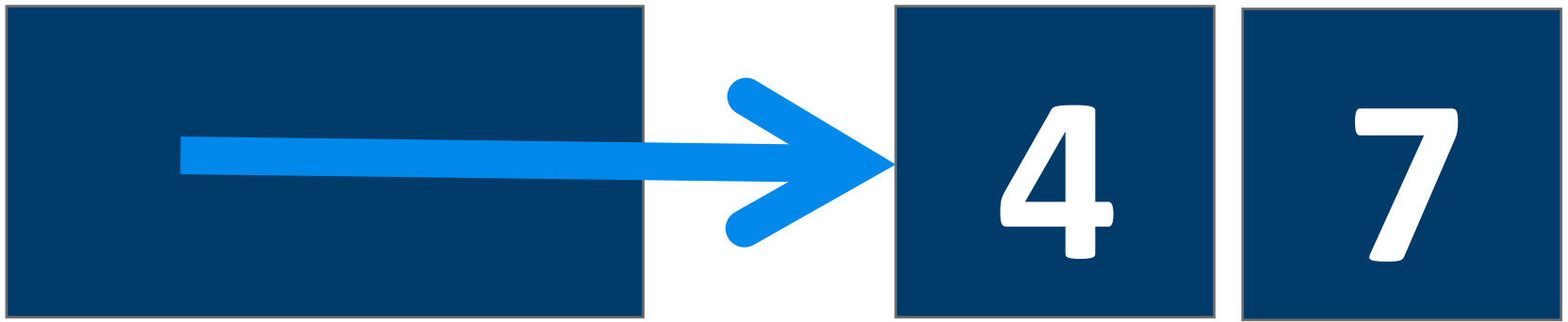
4

7









4

7





```
Point p = __MakeValue(4, 7);
```

██████████

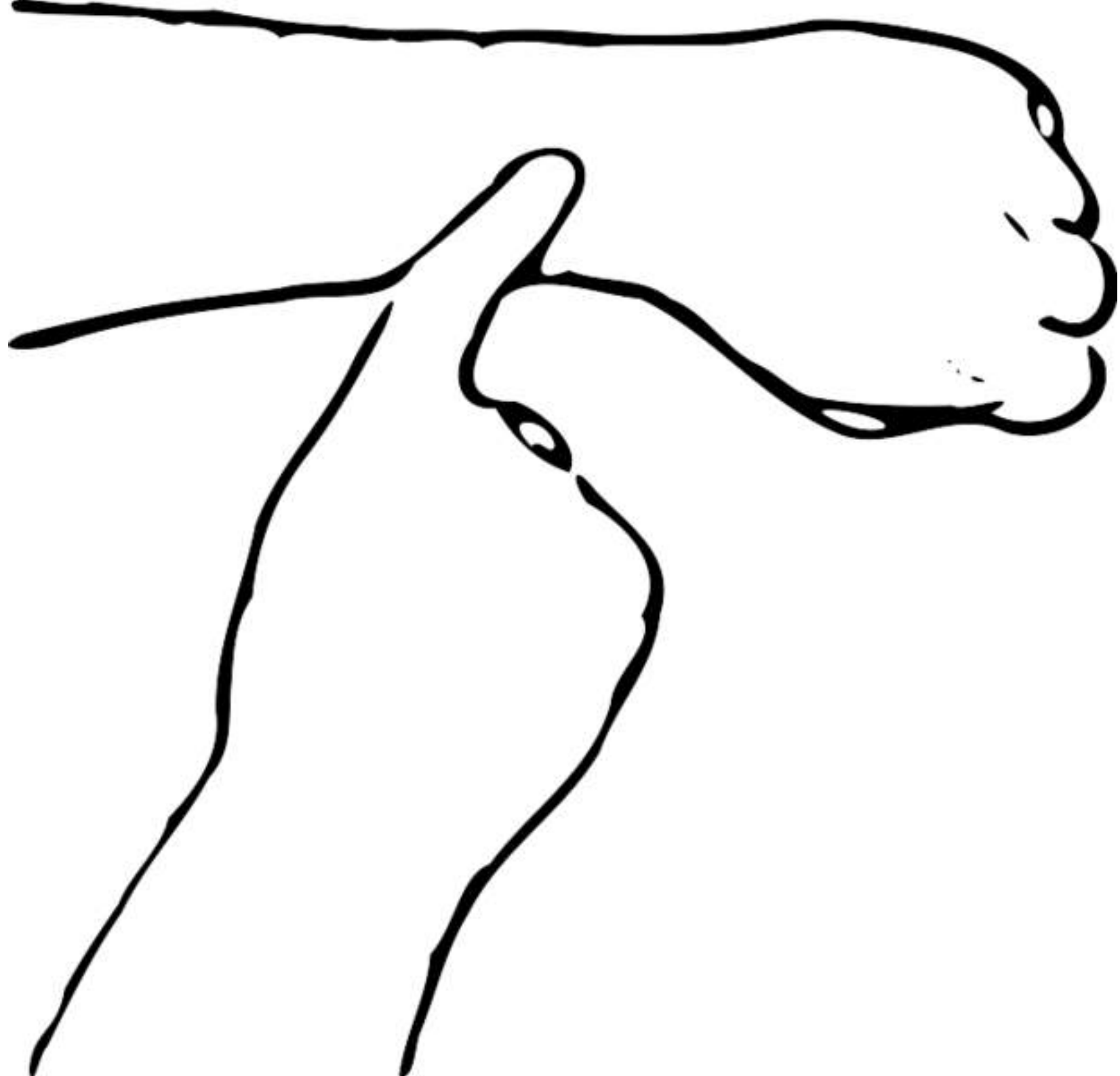
██████████


██████████

██████████

! =

Default-Wert



A black and white graphic of a shield-shaped road sign. The sign has a white background and a black border with a decorative, wavy pattern. In the center of the shield, the number "160" is written in a large, bold, black, sans-serif font. The "1" is a simple vertical bar, the "6" has a curved top, and the "0" is a standard oval shape.

160

Was gibts noch?

ArrayList<Point>

ArrayList<int>

ArrayList<Point>

Zum Schluss



project valhalla



Feedback-Bogen

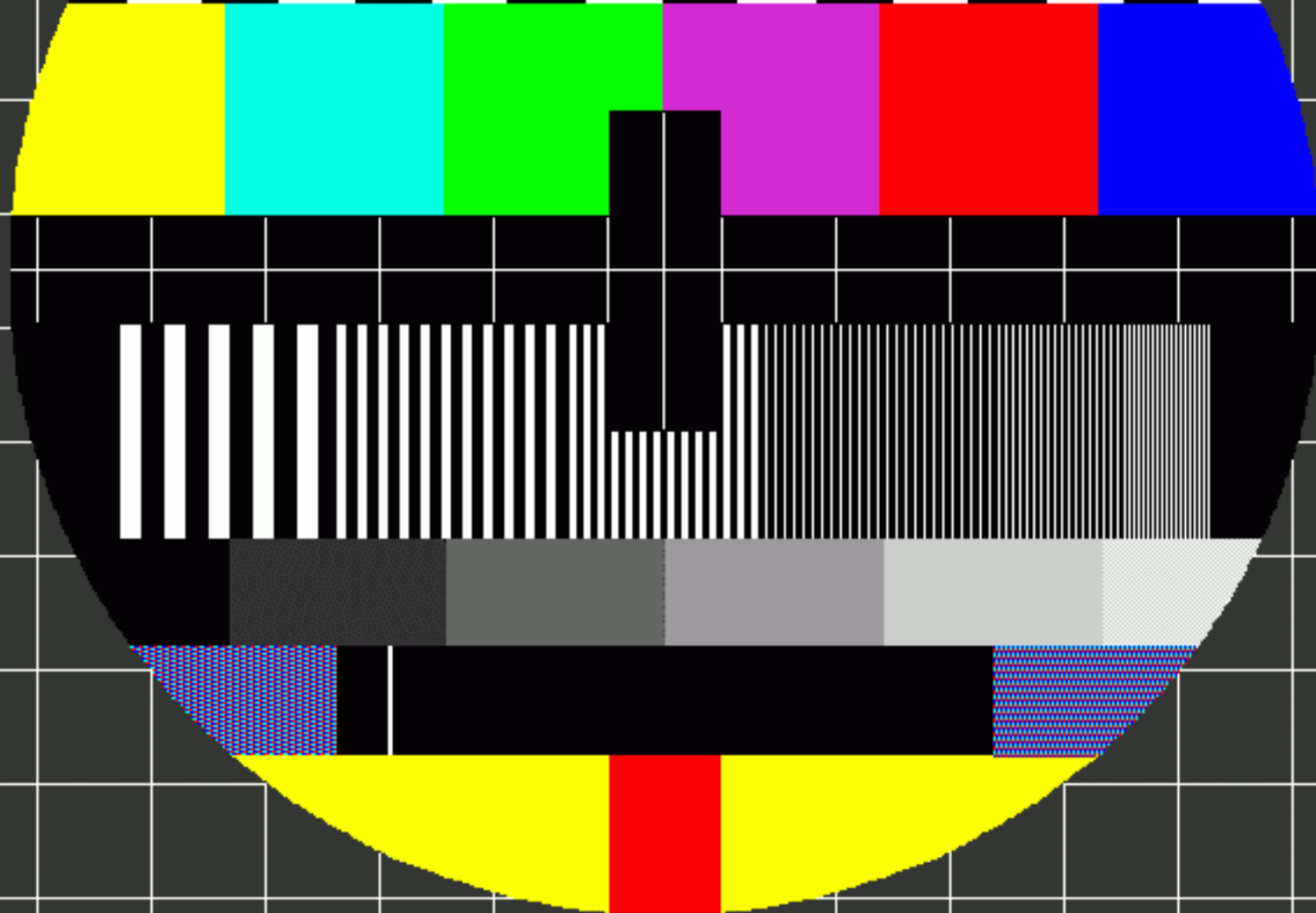
Warum hat dieser Vortrag Ihre Erwartungen erfüllt?



Ihre Hinweise für den Referenten hinsichtlich des Vortragsstils:

Ihre Hinweise für den Referenten hinsichtlich der fachlichen Kompetenz:

SENDESCHLUß



HENNING SCHWENTNER



hs@wps.de
@hschwentner

