

# HashSet

welche Rolle spielen *equals* und *hashCode*?

```

92     Person Anton = leute[0];
93     alLeute.add(Anton);
94
95     Anton.name = "Joseph";
96
97     System.out.println(alLeute);
98
99     HashSet<Person> hsLeute = new HashSet<Person>(alLeute);
100
101     Anton.name = "Tony";
102
103     System.out.println(hsLeute);
104
105 }
106 }
107
108 class Person{
109
110     public String name;
111     public Person(String name){ this.name = name; }
112
113     public String toString(){ return this.name; }
114
115     public boolean equals(Object o){
116
117         if(o == null || o.getClass() != Person.class){
118             return false;
119         }
120
121         return ((Person)o).name.equals(this.name);
122     }
123
124     public int hashCode(){ return name.hashCode(); }
125
126 }

```

```

Person Anton = leute[0];
alLeute.add(Anton);

Anton.name = "Joseph";

System.out.println(alLeute);

HashSet<Person> hsLeute = new HashSet<Person>(alLeute);
Anton.name = "Tony";
System.out.println(hsLeute);
}
}

```

```
class Person{
```

```

    public String name;
    public Person(String name){ this.name = name; }

    public String toString(){ return this.name; }

    public boolean equals(Object o){
        if(o == null || o.getClass() != Person.class){
            return false;
        }

        return ((Person)o).name.equals(this.name);
    }

    public int hashCode(){ return name.hashCode(); }
}

```

## ▶ HashSet <Person>

- ◀ 1. "Anton" wird umbenannt
- ◀ 2. "Anton" verschwindet aus HashSet

## ▶ class Person

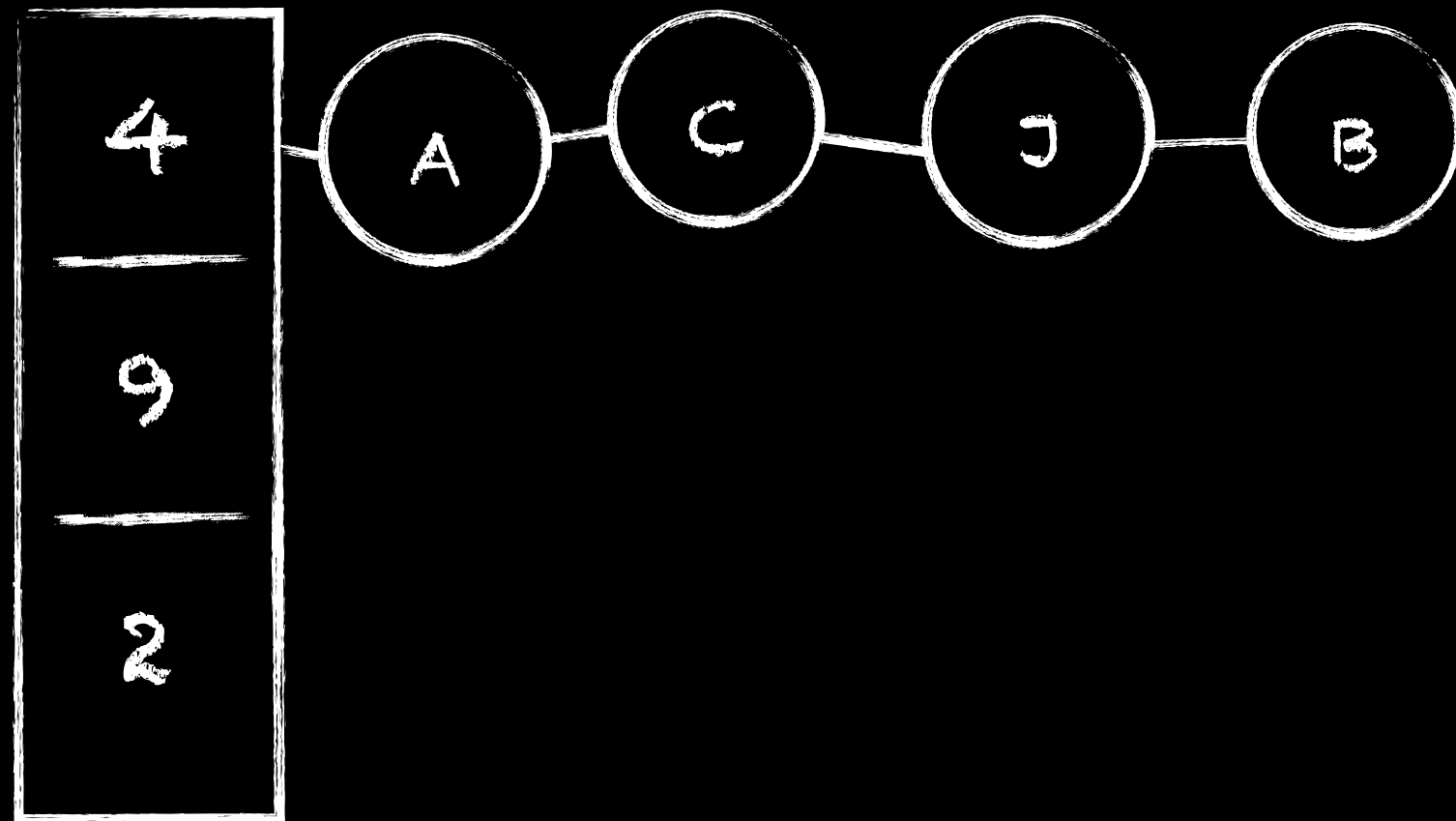
.equals(o) - "true", wenn die  
Werte von Attribut "name" gleich sind.  
.hashCode(){ return this.name.hashCode(); }

# HashSet

key basiert  
auf hashCode

**equals**  
wird geprüft

"Kette"  
von Einträgen



Map

```
class Person
```

```
public S  
public P
```

```
public S
```

```
public b
```

```
if(o
```

```
}
```

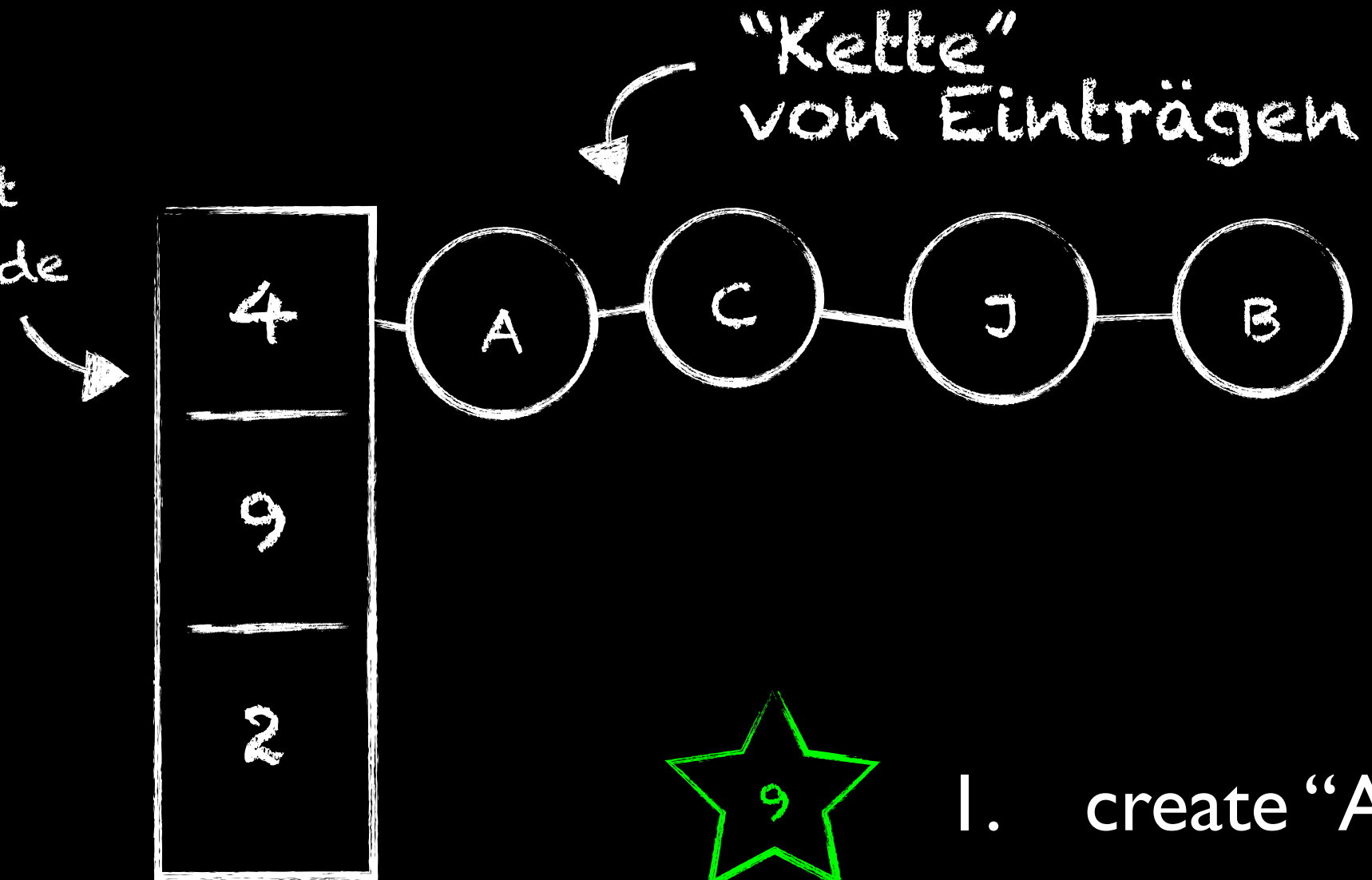
```
retu
```

```
}
```

```
public i
```

# HashSet

key basiert  
auf hashCode

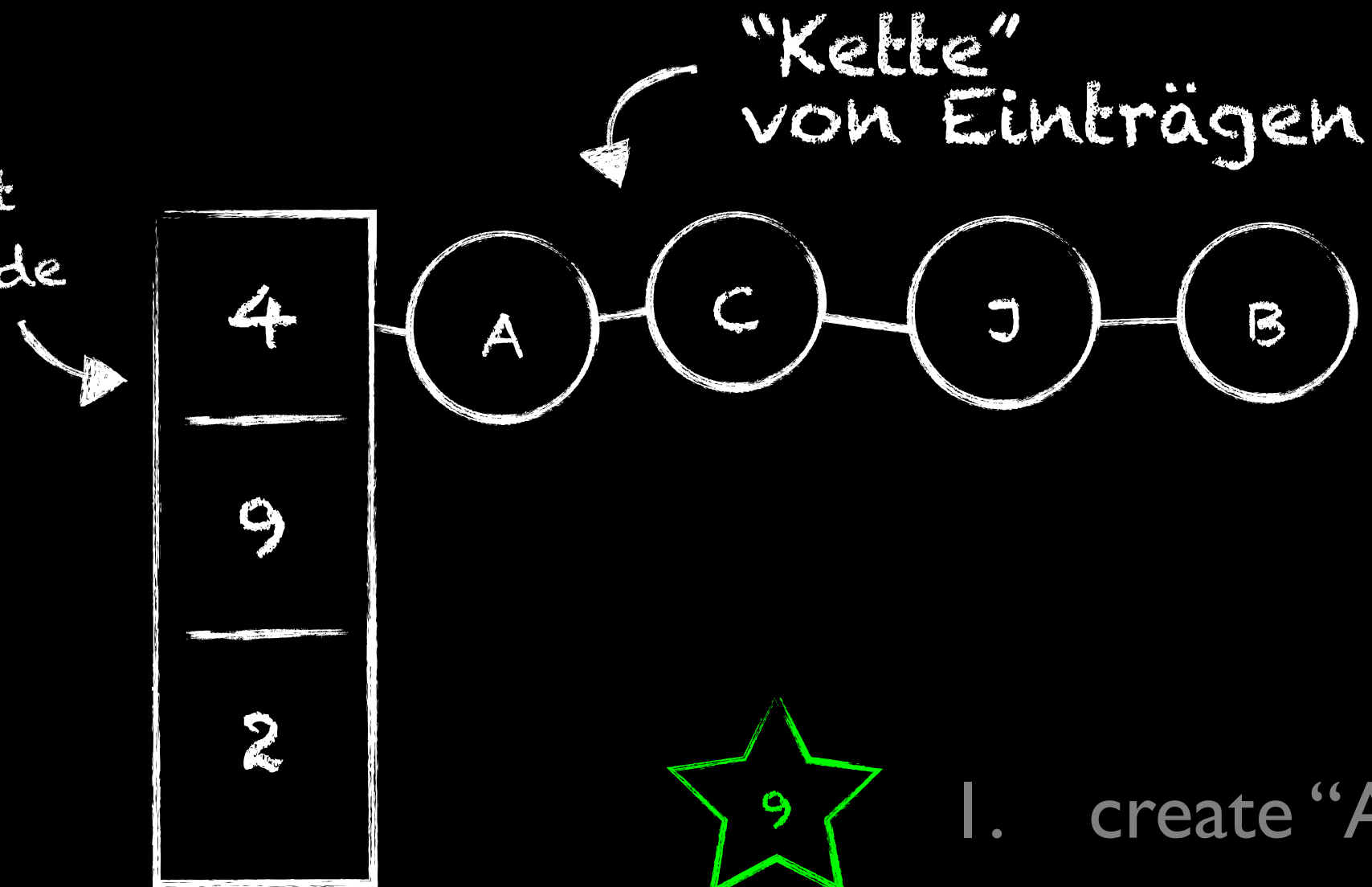


Map

1. create "Anton" // hashCode: 9

# HashSet

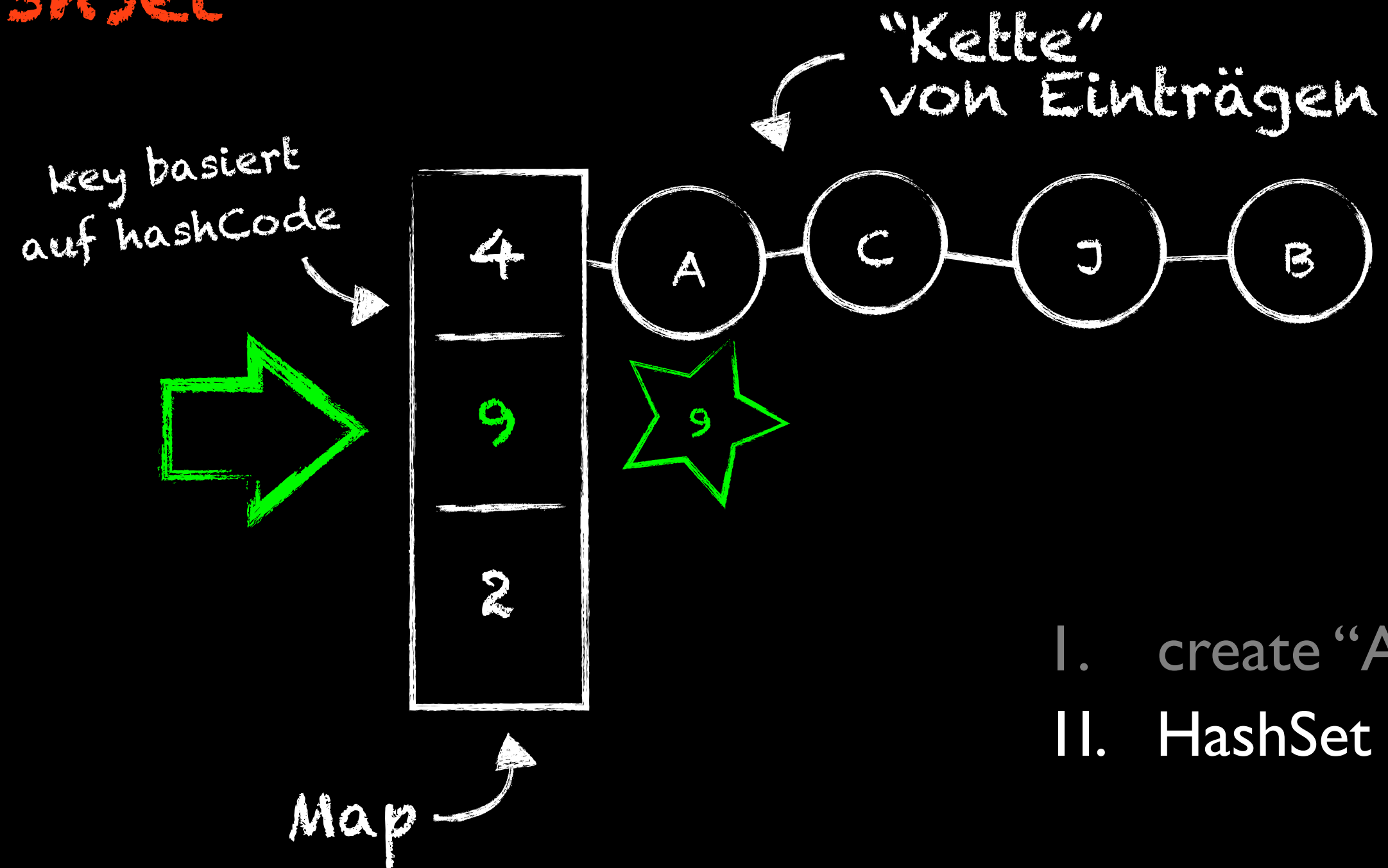
key basiert  
auf hashCode



Map

- I. create "Anton" // hashCode: 9
- II. HashSet add Anton

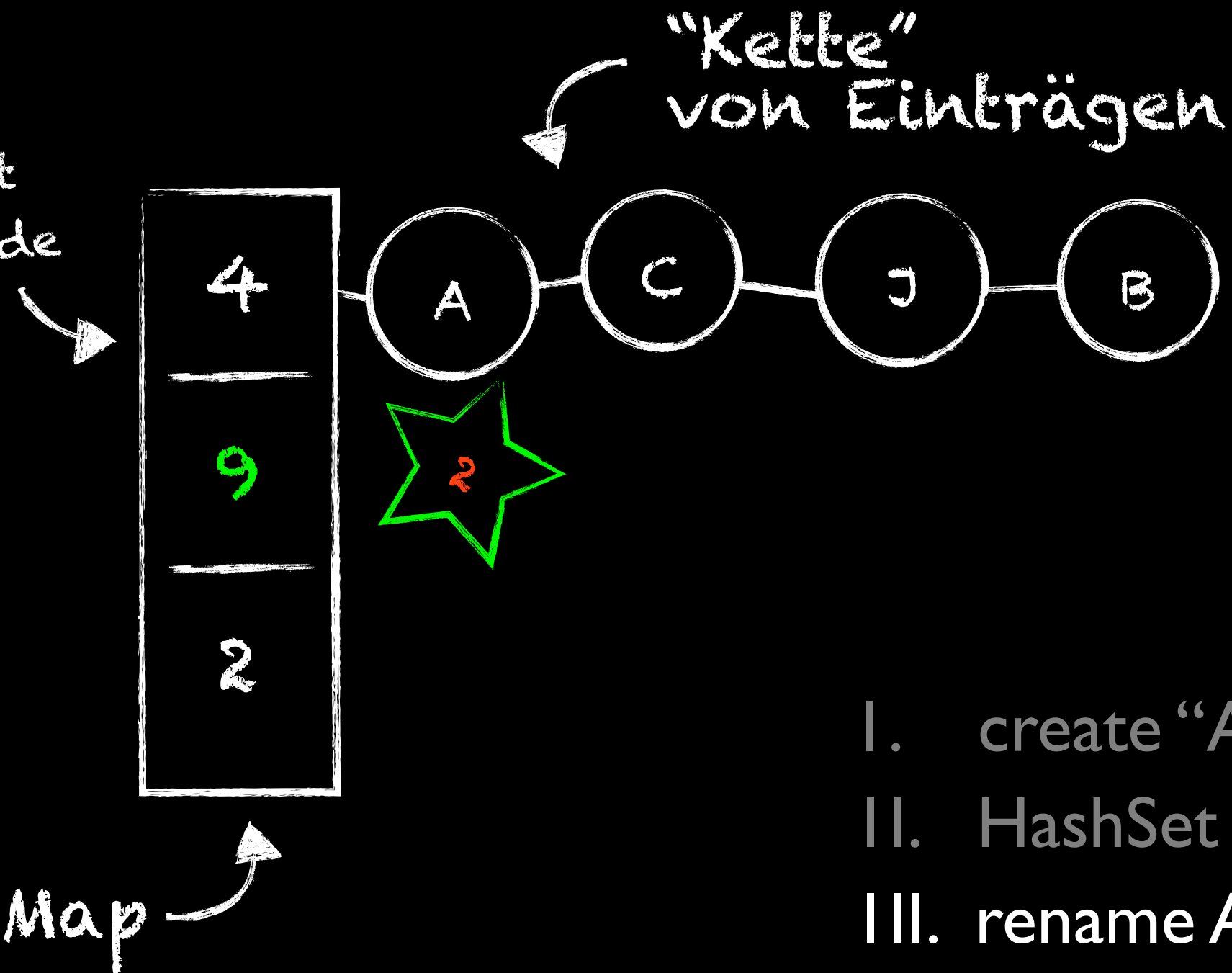
# HashSet



- I. create "Anton" // hashCode: 9
- II. HashSet add Anton

# HashSet

key basiert  
auf hashCode

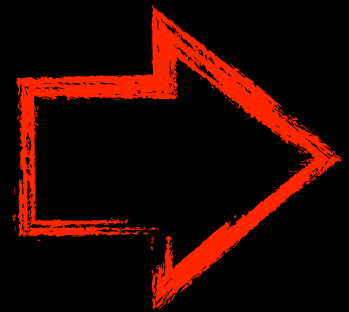


- I. create "Anton" // hashCode: 9
- II. HashSet add Anton
- III. rename Anton // hashCode: 2

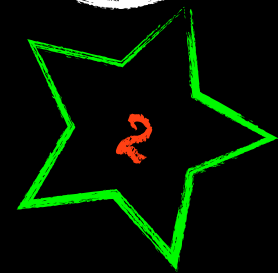


# HashSet

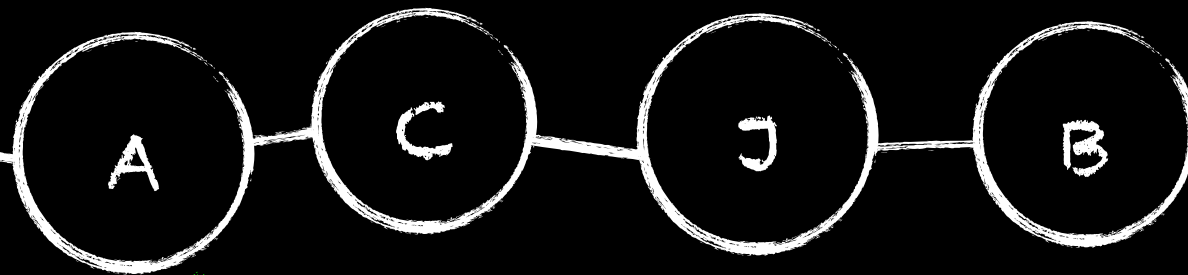
key basiert  
auf hashCode



Map



"Kette"  
von Einträgen



- I. create "Anton" // hashCode: 9
- II. HashSet add Anton
- III. rename Anton // hashCode: 2
- IV. HashSet **!contains** Anton : (

demo



