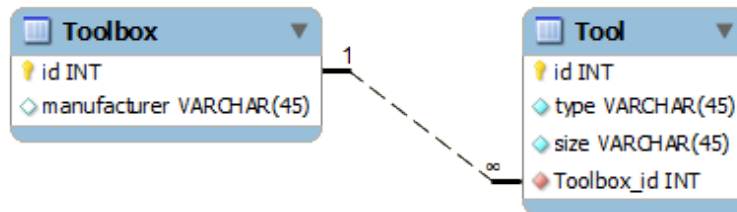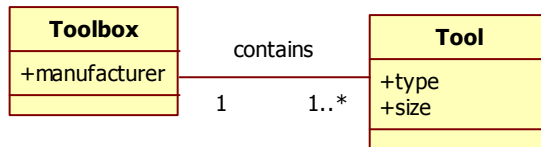CS544 EA

Hibernate

Collection: Set

Set

- Sets are bags that cannot contain duplicates
  - A set has **no built-in order** (can @OrderBy)
  - A set **cannot contain duplicates**

- Store bought Set of Tools:
  - No duplicates
  - No characteristic for order

Set Implementation

- Java has the **java.util.Set** interface
  - **java.util.HashSet** is a general implementation

- Like bags, sets are **non-indexed** collections
  - DB can implement it using FK, no extra index

Toolbox	
+manufacturer	

contains

1   1..*

Tool	
+type	
+size	

🔲 Toolbox ▼
🔑 id INT
◇ manufacturer VARCHAR(45)

1

∞

🔲 Tool ▼
🔑 id INT
◇ type VARCHAR(45)
◇ size VARCHAR(45)
◆ Toolbox_id INT

Toolbox_id FK

3

Equals & HashCode

- Elements **in a Set** need to implement **.equals()** and **.hashcode()**
  - Otherwise Java cannot check uniqueness

IDE can generate these

```java
@Override
public int hashCode() {
    final int prime = 31;
    int result = 1;
    result = prime * result + id;
    result = prime * result + ((size == null) ? 0 :
size.hashCode());
    result = prime * result + ((type == null) ? 0 :
type.hashCode());
    return result;
}

@Override
public boolean equals(Object obj) {
    if (this == obj)
        return true;
    if (obj == null)
        return false;
    if (getClass() != obj.getClass())
        return false;
    Tool other = (Tool) obj;
    if (id != other.id)
        return false;
    if (size == null) {
        if (other.size != null)
            return false;
    } else if (!size.equals(other.size))
        return false;
    if (type == null) {
        if (other.type != null)
            return false;
    } else if (!type.equals(other.type))
        return false;
    return true;
}
```

4

Code for Set

- java.util.**Set** maps as a Set

```java
@Entity
public class ToolBox {
        @Id
        @GeneratedValue
        private Long id;
        private String manufacturer;
        @OneToMany(mappedBy="owner")
        private Set<Tool> tools
                = new HashSet<>();
```

```java
@Entity
public class Tool {
    @Id
    @GeneratedValue
    private int id;
    private String type;
    private String size;
    @ManyToOne
    private Person owner;
```

Set maps
as a Set

HashSet is good
implementation
to start with…

Will be replaced!

Toolbox	contains	Tool
+manufacturer		+type
	1 1..*	+size

Toolbox ▼
🔑 id INT
◇ manufacturer VARCHAR(45)

Tool ▼
🔑 id INT
◇ type VARCHAR(45)
◇ size VARCHAR(45)
◆ Toolbox_id INT

5