

Solving Opacity

- Make the object more visible
- Use tools to see the object



Making Objects More Visible

- Objects are fundamentally opaque
- Data literals are fundamentally transparent

```
[{:name      :Famine
  :weapons   ["Scales"]}
{:name      :Pestilence
  :weapons   ["Bow" "Arrow"]}
{:name      :War
  :weapons   ["Sword"]}
{:name      :Death}]
```

```
@Entity
public class Horseman {
    @Id
    @GeneratedValue(strategy = GenerationType.AUTO)
    private Long id;
    private String name;
    private String[] weapons;

    @Contract(pure = true)
    public Horseman(String name, String[] weapons) {
        this.name = name;
        this.weapons = weapons;
    }

    protected Horseman() {}

    @Override
    public boolean equals(Object o) {
        if (this == o) return true;
        if (o == null || getClass() != o.getClass()) return false;
        Horseman horseman = (Horseman) o;
        return name.equals(horseman.name) &&
            Arrays.equals(weapons, horseman.weapons);
    }

    @Override
    public int hashCode() {
        return Objects.hash(name, weapons);
    }

    @Override
    public String toString() {
        return "Horseman{" +
            "id=" + id +
            ", name='" + name + '\'' +
            ", weapons=" + Arrays.toString(weapons) +
            '}';
    }

    public Long getId() {
        return id;
    }

    public String getName() {
        return name;
    }

    public String[] getWeapons() {
        return weapons;
    }
}
```