

Wildcards



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Upper Bounded

`List<? extends Cls>`

Lower Bounded

`List<? super Cls>`

Unbounded

`List<?>`



The Substitution Principle



Upper Bounded Wildcards



Lower Bounded Wildcards



Unbounded Wildcards



Conclusions



Wildcard Comparison

? extends

Declare an upper bound for the type parameter

To get data out of the parameter

Covariance

? super

Declare a lower bound for the type parameter

To put data into the parameter

Contravariance



Guidelines for Usage

Get data with extends

Put data with super

**Use ? Instead of ? extends
Object**

Get and Put without wildcards



Summary



How Generics and Inheritance interact

Bounded vs. Unbounded Wildcards

How and why to use Wildcards

What about compatibility?

