Cheatography

Java Annotation Cheat Sheet

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Define an Annotation

```
@Retention(RUNTIME) //RetentionPolicy
@Target(TYPE) //ElementType
public @interface MyAnnot {
   boolean value() default false;
   String name();
}
```

Annotation for Classes, Eums and Interfaces available for Reflection

RetentionPolicy

CLASS	Compiled into .class No Reflection
RUNTIME	Available for Reflection
SOURCE	Only in Source Dropped for Compilation

ElementType

TYPE	Class, Interface, Enum
FIELD	Class fields
METHOD	Methods no Constructor
PARAMETER	Any Param of a Method/Constructor
CONSTRUCTOR	Only Constructors
LOCAL_VARIABLE	only Local Vars
ANNOTATION_TYPE	valid for other Annotations
PACKAGE	Annotation for Package

PACKAGE annotations should only be in `package-info.java`

Extract Annotation from Class

`getAnnotation(Class<A> aClass)`	in this class or from parent
`getDeclaredAnnotation(Class<A> aClass)`	only declared in this class
`getAnnotations()`	array of Annotations
`getDeclaredAnnotations()`	array of Annotations

Extract Fields and Methods

`get[Declared]Field(String name)`	extracts a `Field`
`get[Declared]Method(String name, Class<?>... parameterTypes)`	extracts a `Method`
`getConstructors()`	extracts an Array of `Constructor`
`get[Declared]Fields()`	extracts an Array of `Field`
`get[Declared]Methods()`	extracts an Array of `Method`

`getDeclared[...](...)` always points to exactly this Object only including `private`, without `Declared` any `super` can also match but only `public` ones.

Extract Field information

`getName()`	
`getType()`	
`getModifiers()`	
`get(Object obj)`	extract field value from `obj`
`set(Object obj, Object val)`	set field to value

Primitives are available e.g.: `getInt(obj)`, `setInt(obj, val)`

Method Functions

`getName()`	
`getParameterTypes()`	`Class` Array of Types
`getReturnType()`	
`invoke(Object obj, Object... args)`	Call Method

Constructors

`Object.class.newInstance()`	utilizes Default Constructor of an Class object
`const.newInstance(Object.... args)`	utilizes one of the extracted Constructors

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