Interfaces marcadoras para CRUD

# Marker Interfaces

<https://www.baeldung.com/java-marker-interfaces>

A marker interface is an [interface](https://www.baeldung.com/java-interfaces) that **has no methods or constants inside it**. It provides **run-time type information about objects**, so the compiler and JVM have **additional information about the object**.

A marker interface is also called a tagging interface.

Though marker interfaces are still in use, they very likely point to a code smell and should be used carefully. The main reason for this is that they blur the lines about what an interface represents since markers don't define any behavior. Newer development favors annotations to solve some of the same problems.

# Domain type

Un domain type es una de las clases que modelan a las entidades del dominio del problema. Estas clases normalmente estarán en el paquete models.

# Domain type's id type

Es el tipo del campo id de la clase. Como esta clase será implementada en una tabla de la base de datos, necesita una clave primaria, que es justamente esta id.

# Domain repositories

Estas clases están normalmente en el paquete repositories, y son las que conectan las clases de las entidades (que están el paquete models) con el servidor de la base de datos.

Si lo que queremos es nada más que un CRUD, estas clases implementarán la interfaz CrudRepository.

# Interface CrudRepository<T,ID>

<https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html>

Esta interfaz extiende la interfaz Repository.

Interfaz para operaciones CRUD genéricas en un repositorio para un tipo específico.

The CrudRepository provides sophisticated CRUD functionality for the entity class that is being managed.

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| 1 | Saves the given entity. |
| 2 | Returns the entity identified by the given id. |
| 3 | Returns all entities. |
| 4 | Returns the number of entities. |
| 5 | Deletes the given entity. |
| 6 | Indicates whether an entity with the given id exists. |

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| **Modifier and Type** | **Method and Description** |
| long | [**count**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html#count--)()  Returns the number of entities available. |
| void | [**delete**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html#delete-T-)([**T**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html) entity)  Deletes a given entity. |
| void | [**deleteAll**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html#deleteAll--)()  Deletes all entities managed by the repository. |
| void | [**deleteAll**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html#deleteAll-java.lang.Iterable-)([**Iterable**](https://docs.oracle.com/javase/8/docs/api/java/lang/Iterable.html?is-external=true)<? extends [**T**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html)> entities)  Deletes the given entities. |
| void | [**deleteAllById**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html#deleteAllById-java.lang.Iterable-)([**Iterable**](https://docs.oracle.com/javase/8/docs/api/java/lang/Iterable.html?is-external=true)<? extends [**ID**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html)> ids)  Deletes all instances of the type T with the given IDs. |
| void | [**deleteById**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html#deleteById-ID-)([**ID**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html) id)  Deletes the entity with the given id. |
| boolean | [**existsById**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html#existsById-ID-)([**ID**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html) id)  Returns whether an entity with the given id exists. |
| [**Iterable**](https://docs.oracle.com/javase/8/docs/api/java/lang/Iterable.html?is-external=true)<[**T**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html)> | [**findAll**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html#findAll--)()  Returns all instances of the type. |
| [**Iterable**](https://docs.oracle.com/javase/8/docs/api/java/lang/Iterable.html?is-external=true)<[**T**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html)> | [**findAllById**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html#findAllById-java.lang.Iterable-)([**Iterable**](https://docs.oracle.com/javase/8/docs/api/java/lang/Iterable.html?is-external=true)<[**ID**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html)> ids)  Returns all instances of the type T with the given IDs. |
| [**Optional**](https://docs.oracle.com/javase/8/docs/api/java/util/Optional.html?is-external=true)<[**T**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html)> | [**findById**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html#findById-ID-)([**ID**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html) id)  Retrieves an entity by its id. |
| <S extends [**T**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html)> S | [**save**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html#save-S-)(S entity)  Saves a given entity. |
| <S extends [**T**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html)> [**Iterable**](https://docs.oracle.com/javase/8/docs/api/java/lang/Iterable.html?is-external=true)<S> | [**saveAll**](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html#saveAll-java.lang.Iterable-)([**Iterable**](https://docs.oracle.com/javase/8/docs/api/java/lang/Iterable.html?is-external=true)<S> entities)  Saves all given entities. |

Todos los métodos anteriores son automáticamente implementados por Spring Boot con solo incluir la correspondiente anotación.

# Interface Repository<T,ID>

<https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/Repository.html>

Central repository marker interface. Captures the domain type to manage as well as the domain type's id type. General purpose is to hold type information as well as being able to discover interfaces that extend this one during classpath scanning for easy Spring bean creation.

Domain repositories extending this interface can selectively expose CRUD methods by simply declaring methods of the same signature as those declared in [CrudRepository](https://docs.spring.io/spring-data/commons/docs/current/api/org/springframework/data/repository/CrudRepository.html).