

# Create JPA DAO in Spring Boot





# Various DAO Techniques



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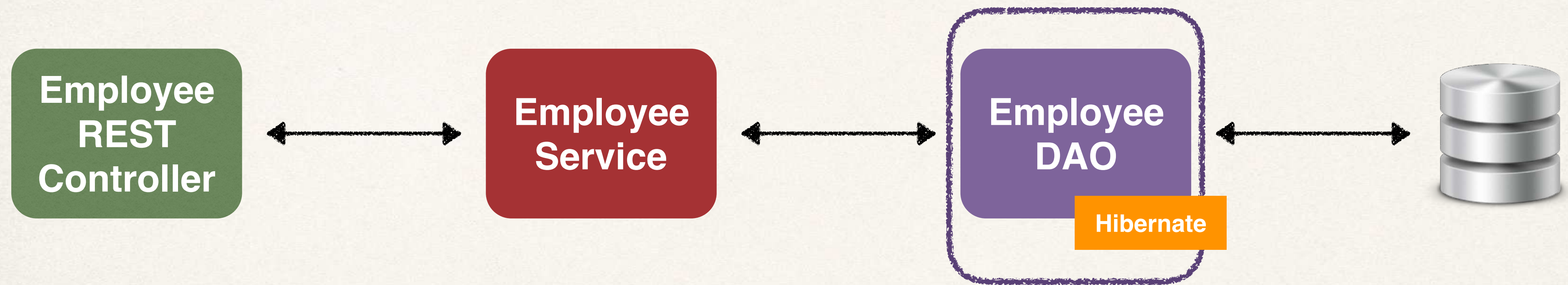


# Various DAO Techniques

- ✔ Version 1: Use EntityManager but leverage native Hibernate API
- ✎ Version 2: Use EntityManager and standard JPA API
- Version 3: Spring Data JPA

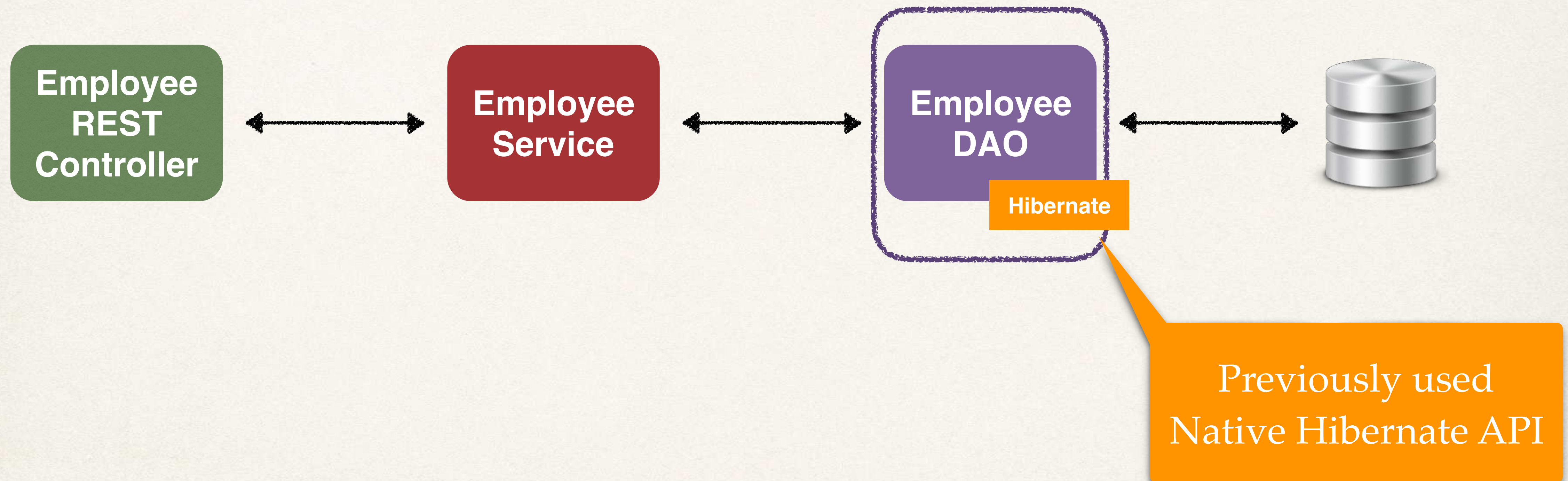


# Application Architecture



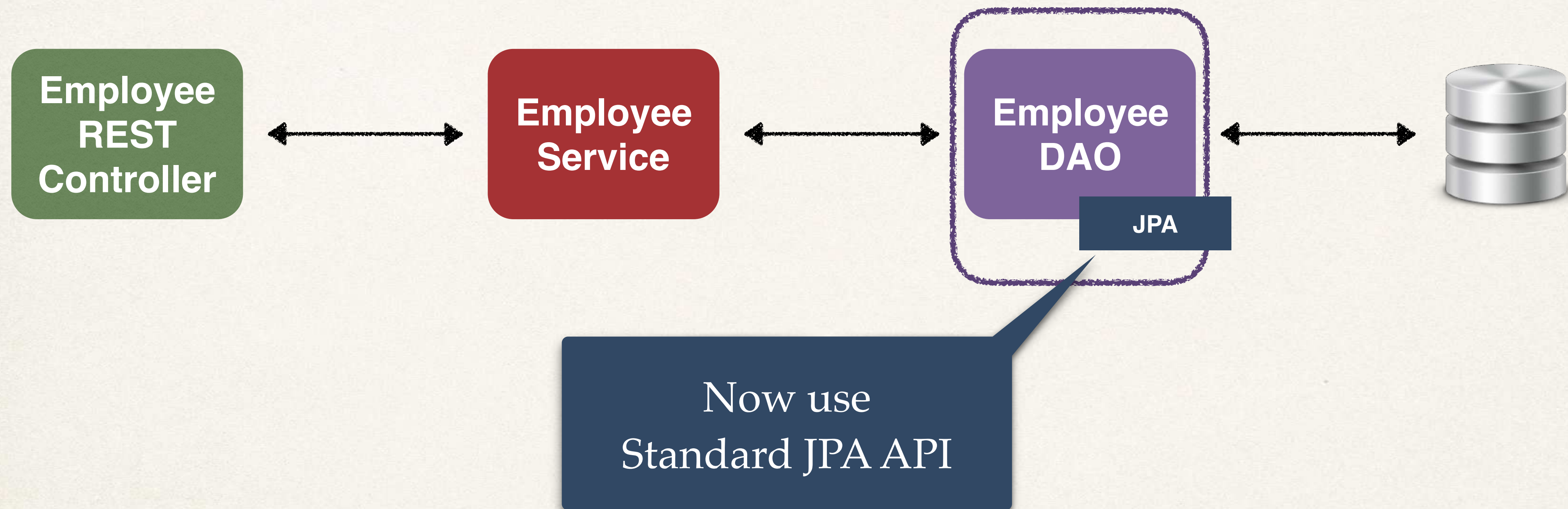


# Application Architecture





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My Biz  
App



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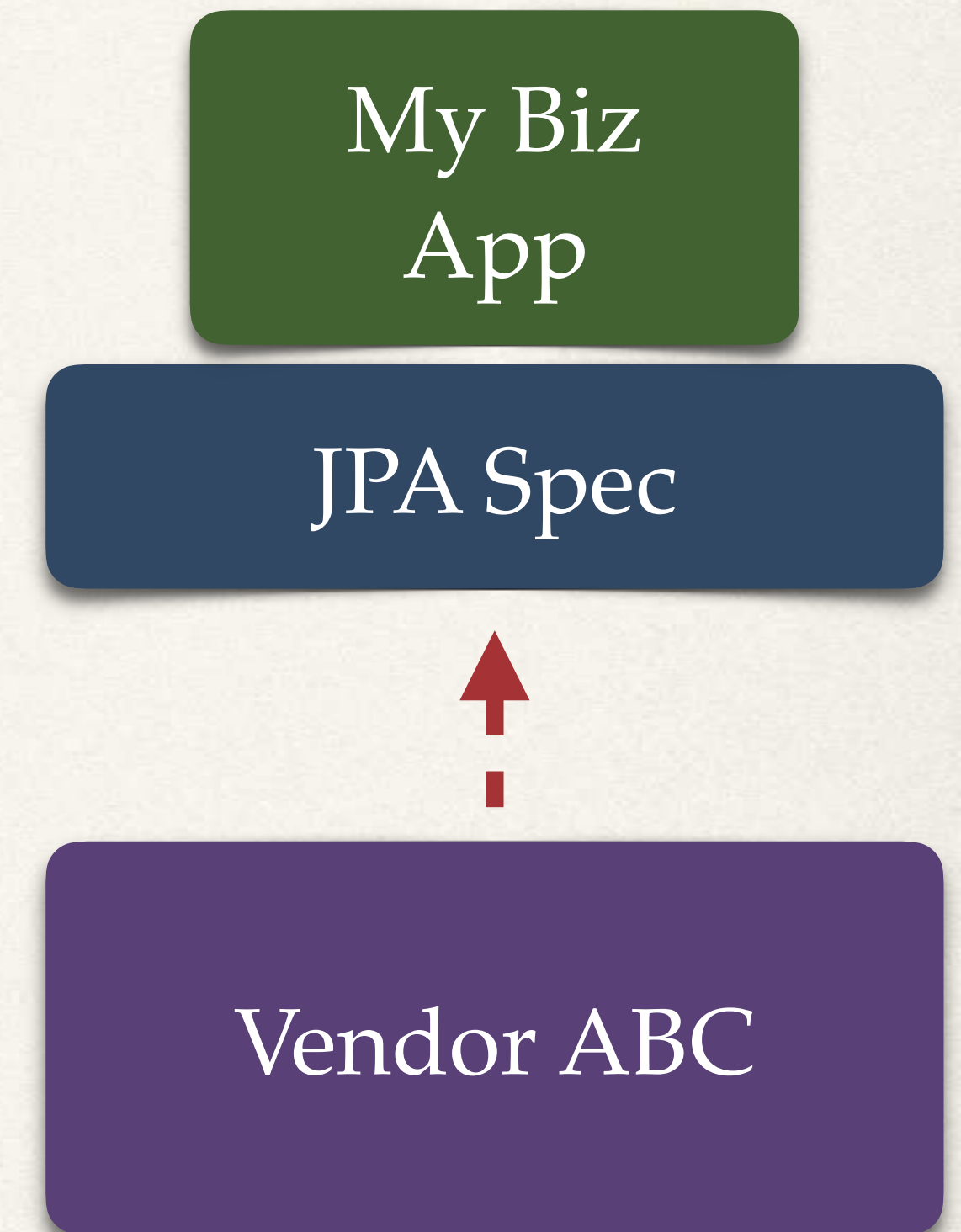
My Biz  
App

JPA Spec



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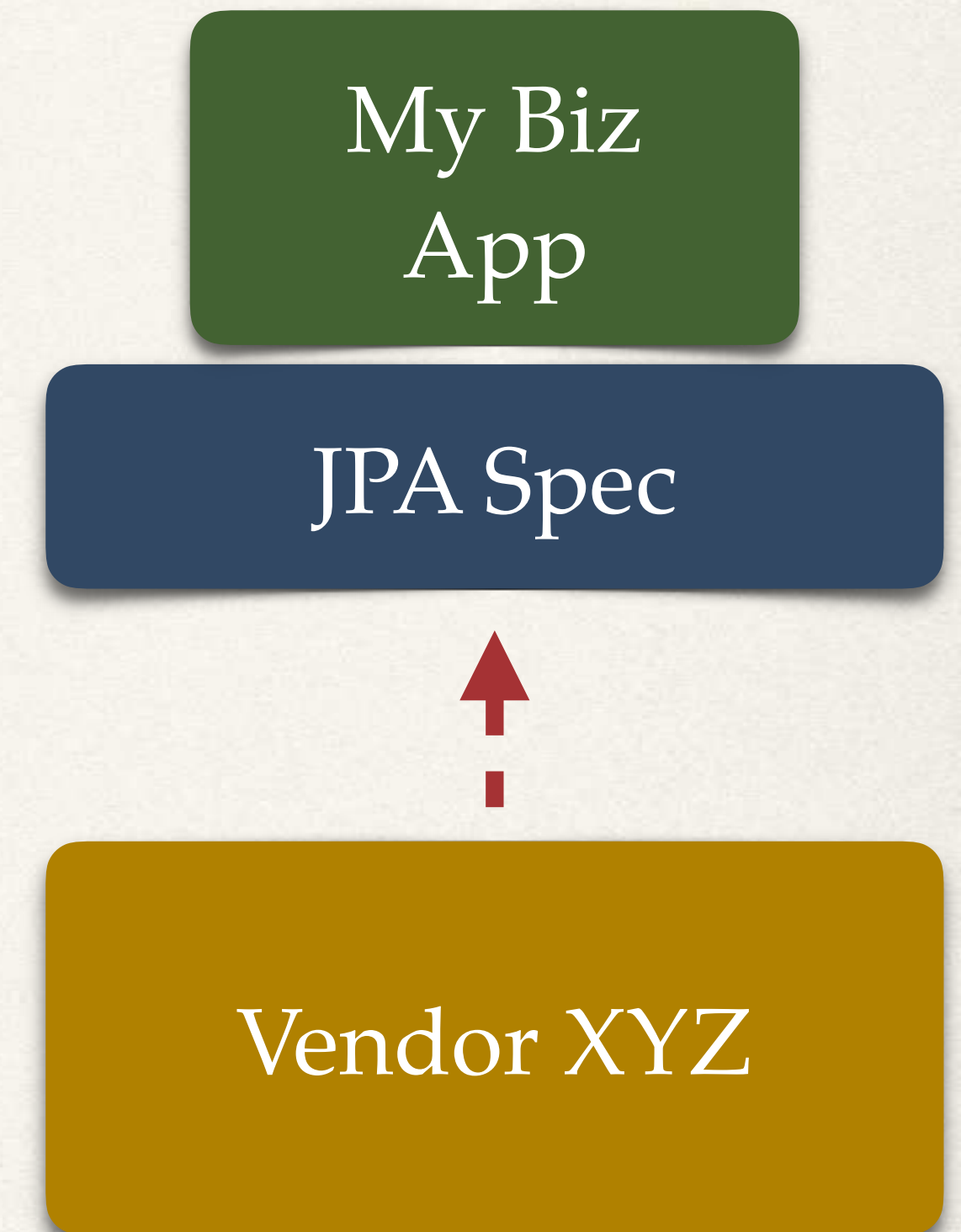
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[\*\*www.luv2code.com/jpql\*\*](http://www.luv2code.com/jpql)



# Comparing JPA to Native Hibernate Methods



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Save or update entity	<code>session.saveOrUpdate(...)</code>	<code>entityManager.merge(...)</code>



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High-level comparison  
Other options depending on context ...



# Development Process

1. Set up Database Dev Environment
2. Create Spring Boot project using Spring Initializr
3. Get list of employees
4. Get single employee by ID
5. Add a new employee
6. Update an existing employee
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**Step-By-Step**



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**Using  
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JPA API**



# DAO Impl



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@Repository  
public class EmployeeDAOJpaImpl implements EmployeeDAO {
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Same interface for  
consistent API

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public class EmployeeDAOJpaImpl implements EmployeeDAO {  
  
    private EntityManager entityManager;  
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@Repository
public class EmployeeDAOJpaImpl implements EmployeeDAO {

    private EntityManager entityManager;

    @Autowired
    public EmployeeDAOJpaImpl(EntityManager theEntityManager) {
        entityManager = theEntityManager;
    }

    ...
}
```



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Automatically created  
by Spring Boot

Constructor  
injection



# Get a list of employees

JPA API



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@Override  
public List<Employee> findAll() {
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    // return the results
    return employees;
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```

Using  
Standard  
JPA API



# Get a list of employees

JPA API

Remember: No need to manage transactions ...

Handled at Service layer with @Transactional

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Using  
Standard  
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# Get a single employee

JPA API



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@Override  
public Employee findById(int theId) {
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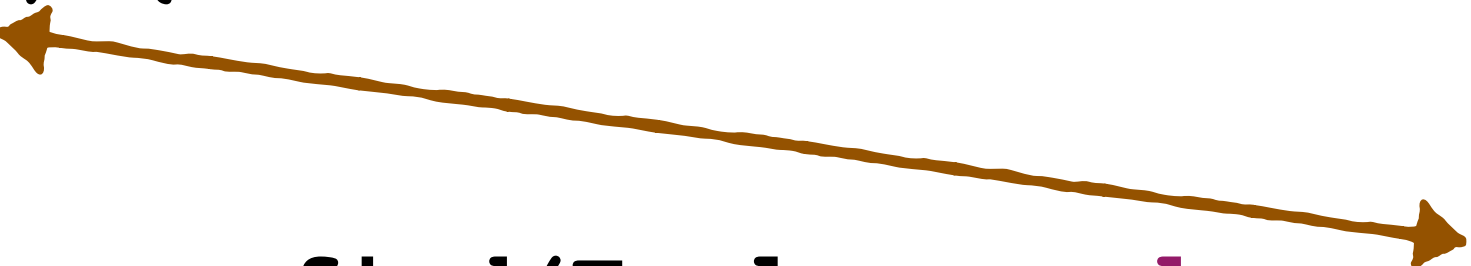


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@Override
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if id == 0  
then save/insert  
else update



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```
@Override
public void save(Employee theEmployee) {

    // save or update the employee
    Employee dbEmployee = entityManager.merge(theEmployee);

    // update with id from db ... so we can get generated id for save/insert
    theEmployee.setId(dbEmployee.getId());
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if id == 0  
then save/insert  
else update

Useful in our REST API  
to return generated id



# Delete an existing employee

JPA API



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@Override  
public void deleteById(int theId) {
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# Delete an existing employee

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```
@Override
public void deleteById(int theId) {

    // delete object with primary key
    Query theQuery = entityManager.createQuery(
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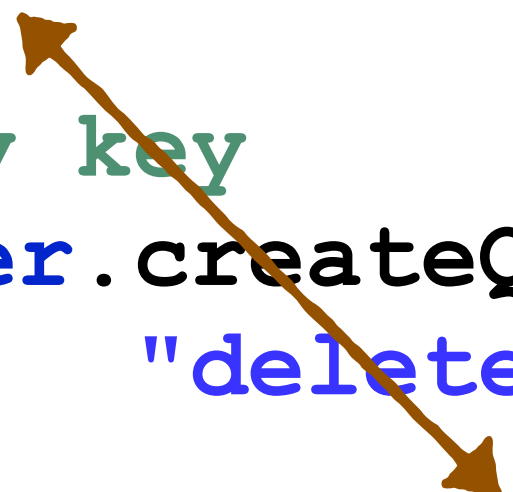
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A brown arrow points from the underlined parameter 'employeeId' in the SQL query string to the 'theId' argument in the 'setParameter' method call. Another brown arrow points from the 'theId' argument in the method signature to the 'theId' argument in the 'setParameter' call.



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