

```
interface BookDao {
    void addBook(Book b);
}

public class BookDaoMongoImpl implements BookDao {
    public void addBook(Book b) {...}
}

public class BookDaoMySQLImpl implements BookDao {
    public void addBook(Book b) {...}
}

public class AppService {
    private BookDao bookDao; // not tightly coupled to impl
    public void setDao(BookDao dao) {
        this.bookDao = dao;
    }

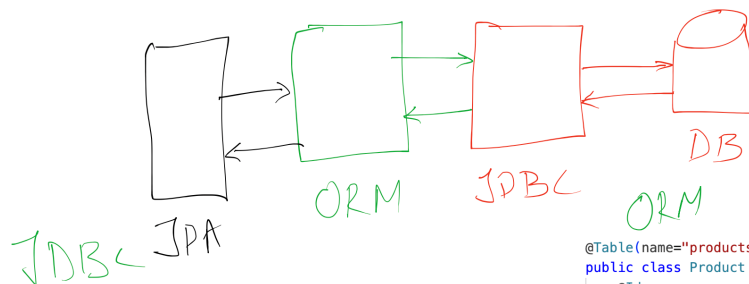
    public void insert(Book b) {
        this.bookDao.addBook(b);
    }
}
```

```
beans.xml
<beans>
    <bean id="mysql" class="pkg.BookDaoMySQLImpl" /> ①
    <bean id="mongo" class="pkg.BookDaoMongoImpl" /> ②
    <bean id="service" class="pkg.AppService">
        <property name="dao" ref="mongo" /> ③
    </bean>
</beans>
```

↓ setDao

```
ApplicationContext ctx = new ClassPathXmlApplicationContext("beans.xml");
```

```
AppService ser = ctx.getBean("service", AppService.class);
```



```
@Override
public void addProduct(Product product) throws PersistenceException {
    String SQL = "INSERT INTO products(id, name, price, quantity) VALUES(?, ?, ?, ?)";
    Connection con = null;
    try {
        con = DBUtil.getConnection();
        PreparedStatement ps = con.prepareStatement(SQL);
        ps.setString(1, product.getName());
        ps.setDouble(2, product.getPrice());
        ps.setInt(3, product.getQuantity());
        ps.executeUpdate();
    } catch (SQLException e) {
        // log
        throw new PersistenceException("unable to add product", e);
    } finally {
        DBUtil.closeConnection(con);
    }
}
```

```
@Table(name="products")
public class Product {
    @Id
    private int id;
    private String name;
    @Column(name="amount")
    private double price;
    @Column(name="qty")
    private int quantity;
}
```

```
public void addProduct(Product p) {
    em.persist(p);
}
```

