Understanding Programmatic Transaction Management vs. Declarative Transaction Management

Kesha Williams
SOFTWARE ENGINEERING MANAGER & PROFESSOR

@KeshaWillz www.kesha.tech

Overview

Programmatic transaction management

Declarative transaction management

Programmatic versus declarative

Programmatic

- Manage transactions via code
- Useful for minimal transaction logic
- Flexible but difficult to maintain
- Couples transaction and business logic

Declarative

- Manage transactions via configuration
- Separate transaction logic from business logic
- Easy to maintain
- Preferred when a lot of transaction logic

@Transactional vs. Platform Transaction Manager

Declarative

```
@Service

@Transactional

public class ReleaseService implements IReleaseService{

public Release scheduleRelease(Release release) {
    createTickets(release);
    assignTicketsToRelease(release.getId(),
        release.getTickets());

    return release;

}
```

Platform Transaction Manager

```
public Release scheduleRelease(Release release) {
    TransactionDefinition transactionDefinition = new
        DefaultTransactionDefinition();
    TransactionStatus transactionStatus =
    transactionManager.getTransaction(transactionDefinition);
    try {
        createTickets(release);
        assignTicketsToRelease(release.getId(),
        release.getTickets());
        transactionManager.commit(transactionStatus);
    } catch (RuntimeException e) {
        transactionManager.rollback(transactionStatus);
        throw e;
    }
    return release;
```

Demo

Platform transaction manager

- Level of control

Summary

Programmatic transaction manager

Declarative transaction manager

Easy to maintain and evolve