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Representing Aspects in Design Model

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Problems/Motivation

- No design model in existence for effectively representing Aspects
- No effective mechanism in use for identifying and representing Aspects in Analysis and Design phases
- No effective mechanism in use for showing interaction of Aspects with Base Program Model
- No mature design model in existence for Aspects which could be interpreted in Implementation (Code).
- Need for Unified Design model of Aspect-Oriented Software Development

Impact

- Representation of Aspects along with Base Functions in Design Model
- Facilitates designers to identify interaction of Aspects with Base program
- Facilitates designers to identify Aspects, Join Points and ultimately helps writing effective point cuts and advices
- Easy design to interpret in Implementation

Results

- No design model in existence for effectively representing Aspects
- No effective mechanism in use for identifying and representing Aspects in Analysis and Design phases
- No effective mechanism in use for showing interaction of Aspects with Base Program Model
- No mature design model in existence for Aspects which could be interpreted in Implementation (Code).
- Need for Unified Design model of Aspect-Oriented Software Development

Proposed Model

AOSD Model

System Requirements Specification (SRS)

Candidate Aspects

Representing Aspects in Sequence Diagrams

Representing Aspects in Class Diagrams

Implementing Base Classes

Implementing Aspectual Classes

Motivated to propose

Use Case Model

User

login

withdraw cash

view account

generate statement

ATM

AccountController

Account

CashDispenser

LoginAspect

AccessControlAspect

Sequence Diagram with Aspectual Objects

Class Diagram with Aspects

ATM

LoggingAspect

Transaction

SecurityAspect

Deposit

Statements

Withdraw