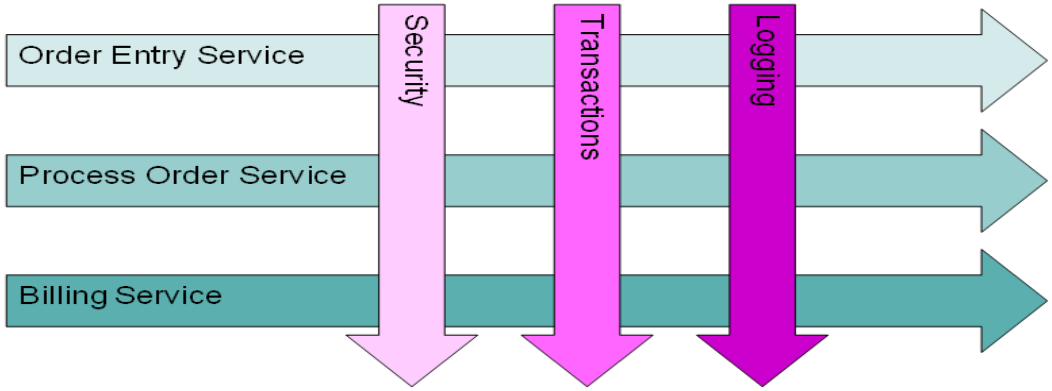
Spring AOP

Rajeev Gupta MTech CS
Java Trainer & Consultant

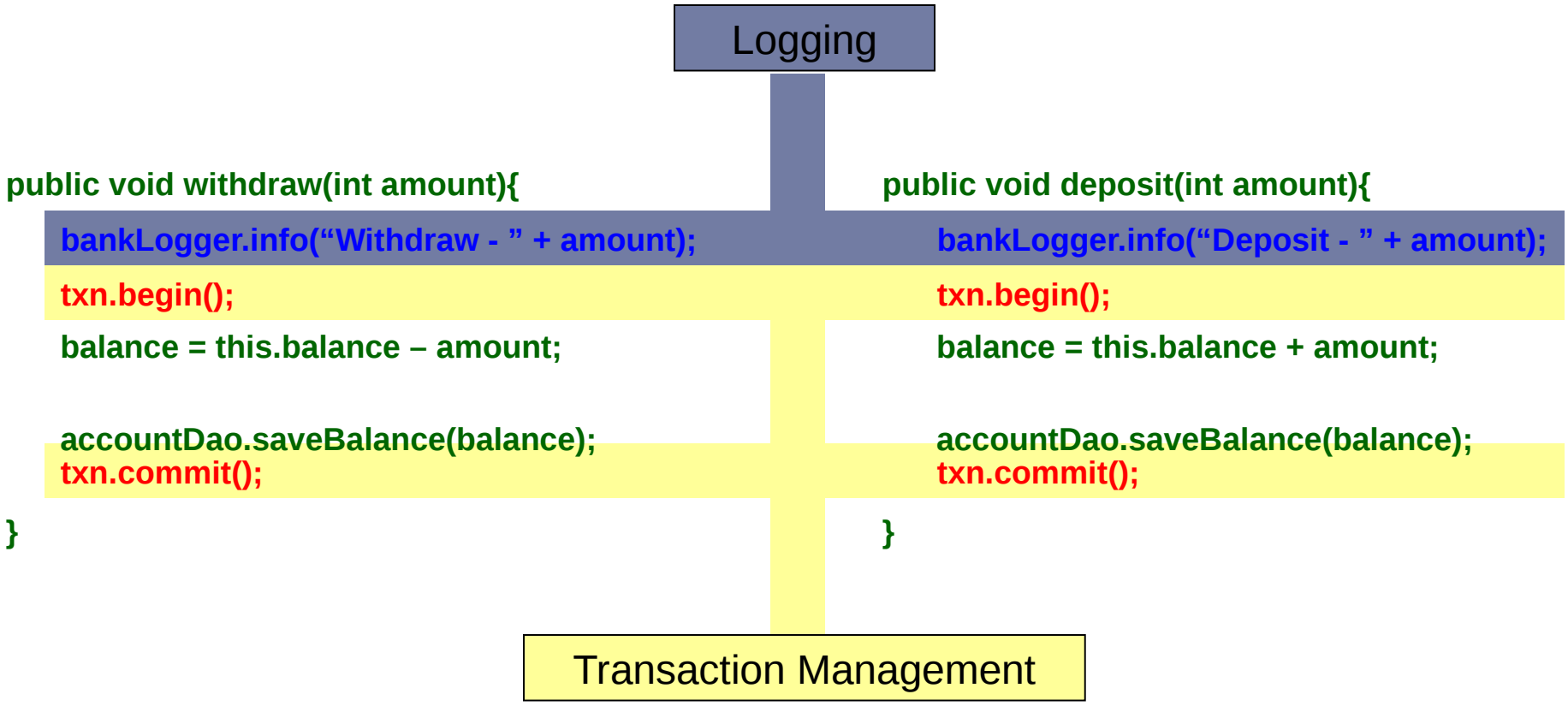
Introduction to AOP

- What is AOP?
  - AOP is a style of programming, mainly good in separating cross cutting concerns
- How AOP works?
  - Achieved usages Proxy design Pattern to separate CCC's form actual code
  - Cross Cutting Concern ?
  - Extra code mixed with the actual code is called CCC's
  - Extra code mixed with code lead to maintenance issues
    - **Logging**
    - **validations**
    - **Auditing**
    - **Security**



Crosscutting Concerns

- Eg: Banking Application

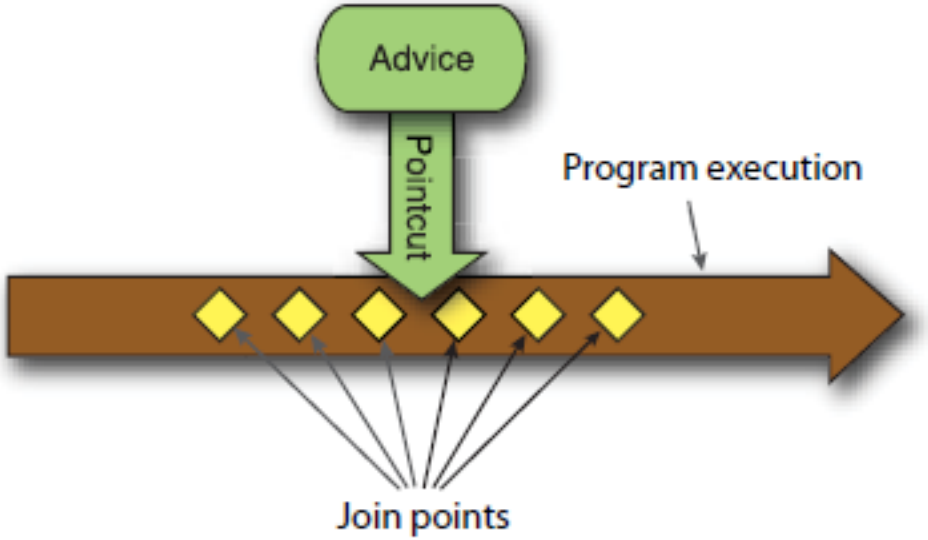


Understanding AOP terminology

Join points : are the options on the menu and
pointcuts : are the items you select

Aspect =Advices + Point Cut

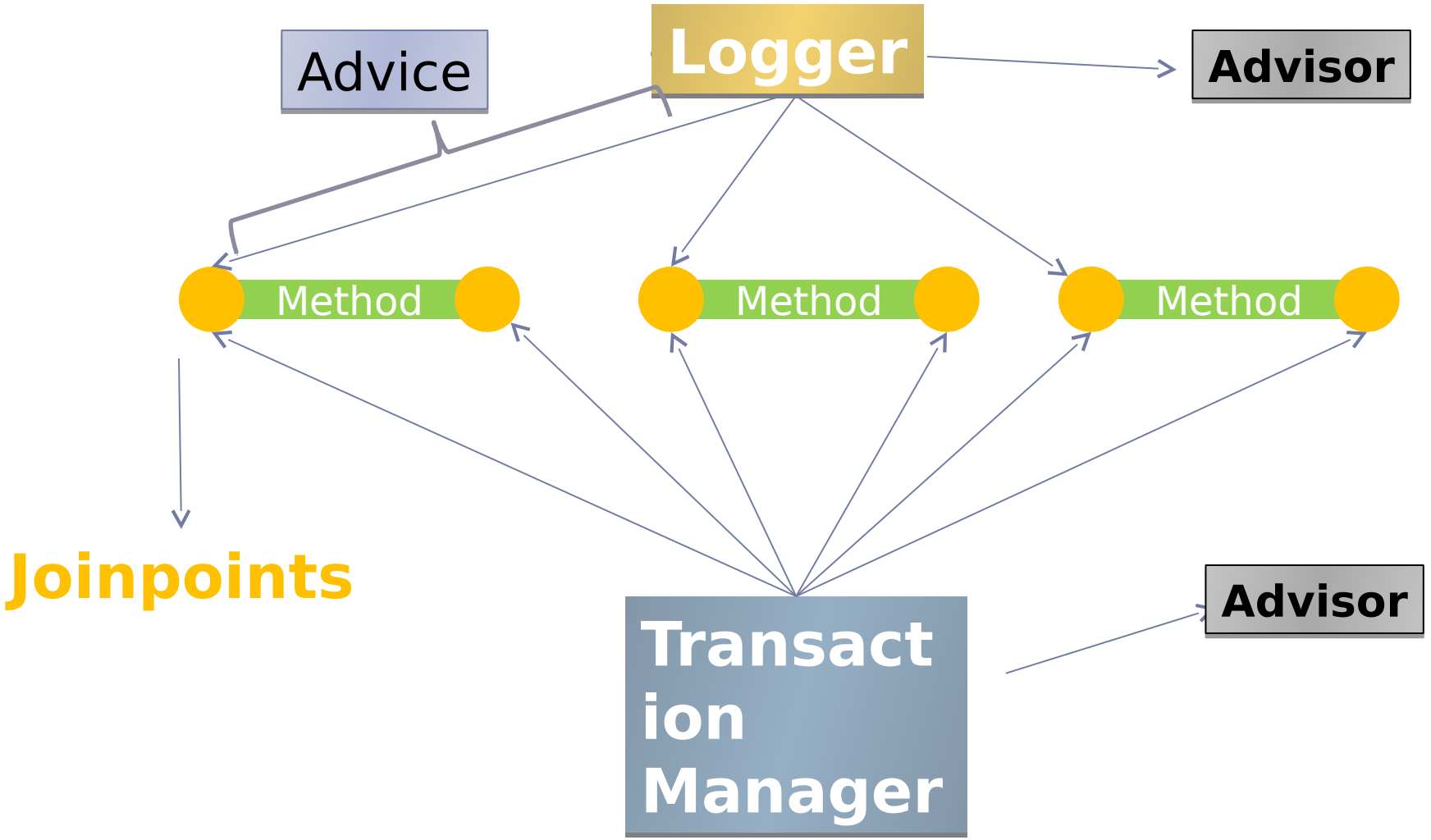
Aspect means
what (extra logic) and where it need to be applied (point cut)



AOP – Definitions.

- **Aspect**
- **Joinpoint**
- **Advice**
- **Pointcut**
- **Target Object**
- **AOP Proxy**
- **Weaving**

AOP – Definitions.



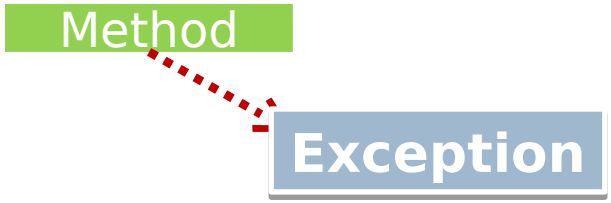
Advice Types

- Before Advice

- After returning Advice

- Around Advice

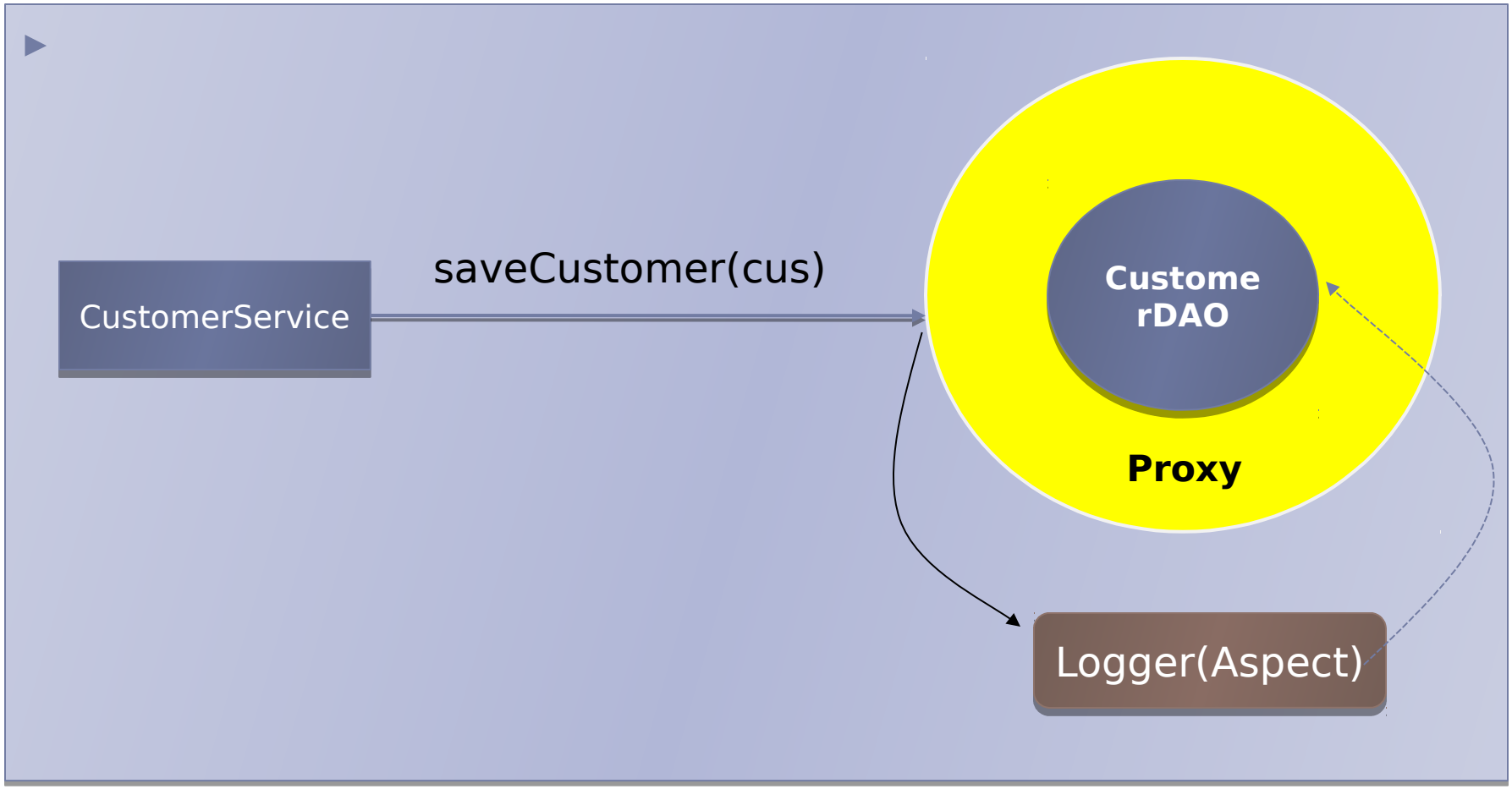
- Throws Advice



WEAVING

- Weaving is the process of applying aspects to a target object to create a new proxied object. The aspects are woven into the target object at the specified join points. The weaving can take place at several points in the target object's lifetime:
  - **Compile time** —Aspects are woven in when the target class is compiled.
  - **Classload time** —Aspects are woven in when the target class is loaded into the JVM.
  - **Runtime** —Aspects are woven in sometime during the execution of the applica- tion. Typically, an AOP container will dynamically generate a proxy object that will delegate to the target object while weaving in the aspects.

AOP - Weaving


CustomerService
saveCustomer(cus)
Custome
rDAO
Proxy
Logger(Aspect)

Understanding Point Cut wildcard