Spring AOP

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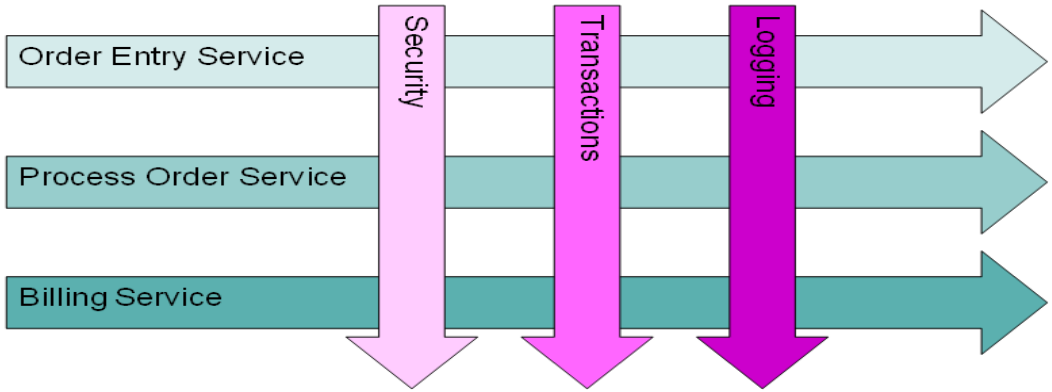
Introduction to AOP

- 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

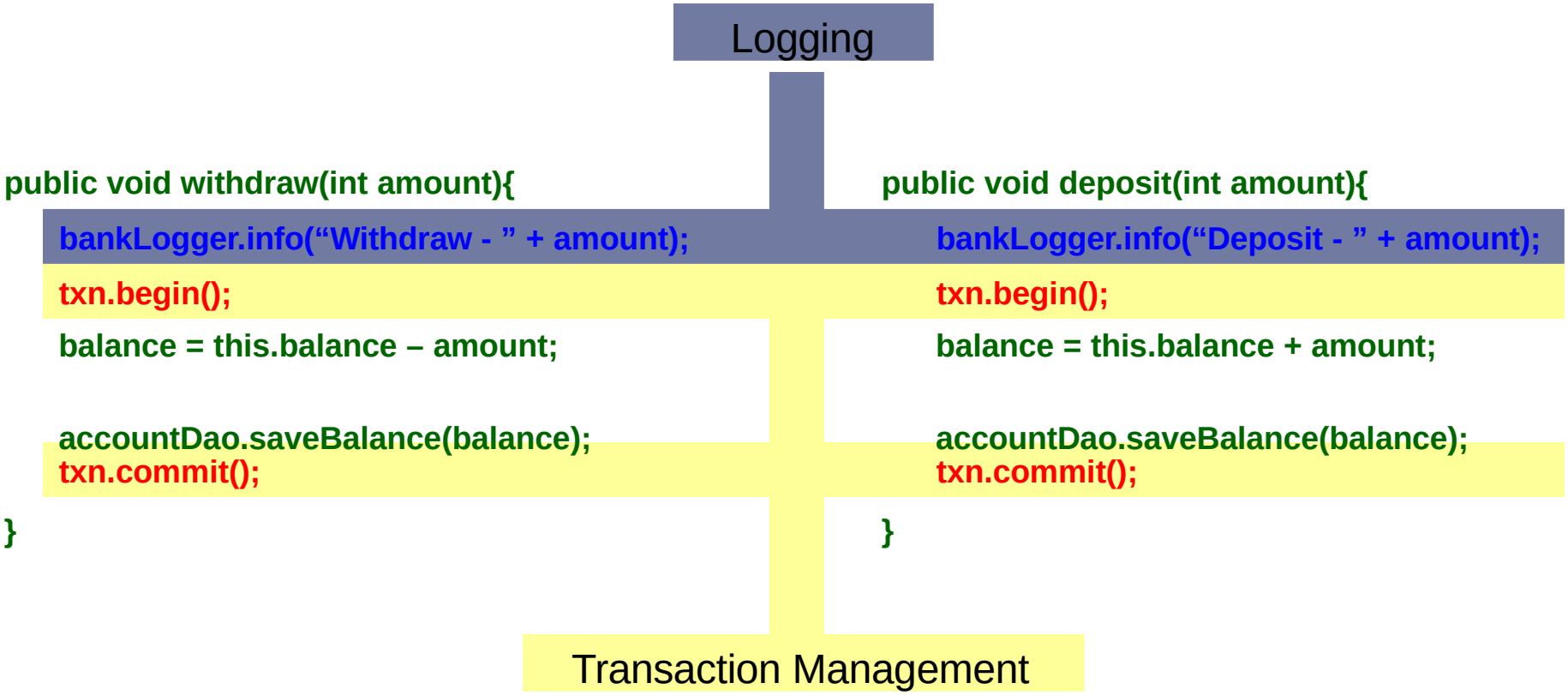
  Extra code mixed with code lead to maintenance issues

- **Logging**
- **validations**
- **Auditing**
- **Security**



Crosscutting Concerns

- **Eg: Banking Application**

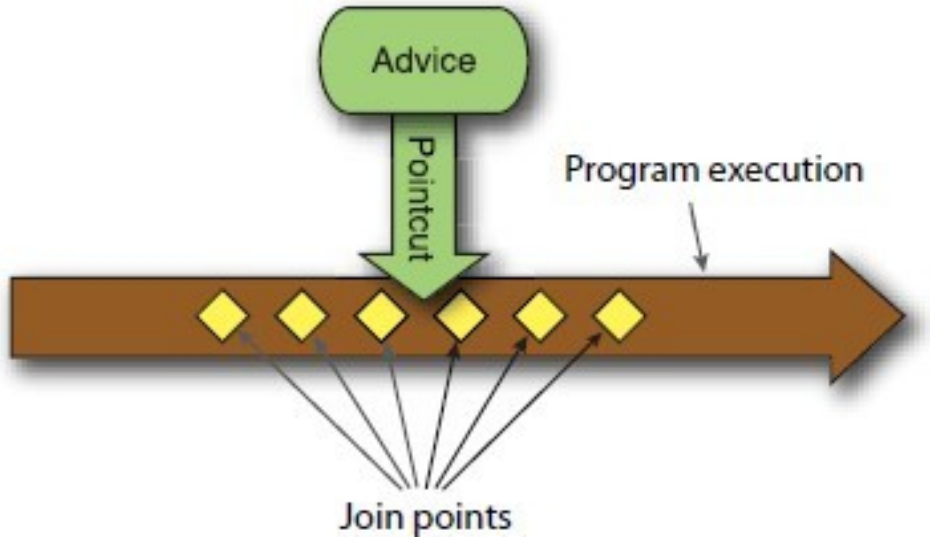


Understanding AOP terminology

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

Aspect =Advices + Point Cut

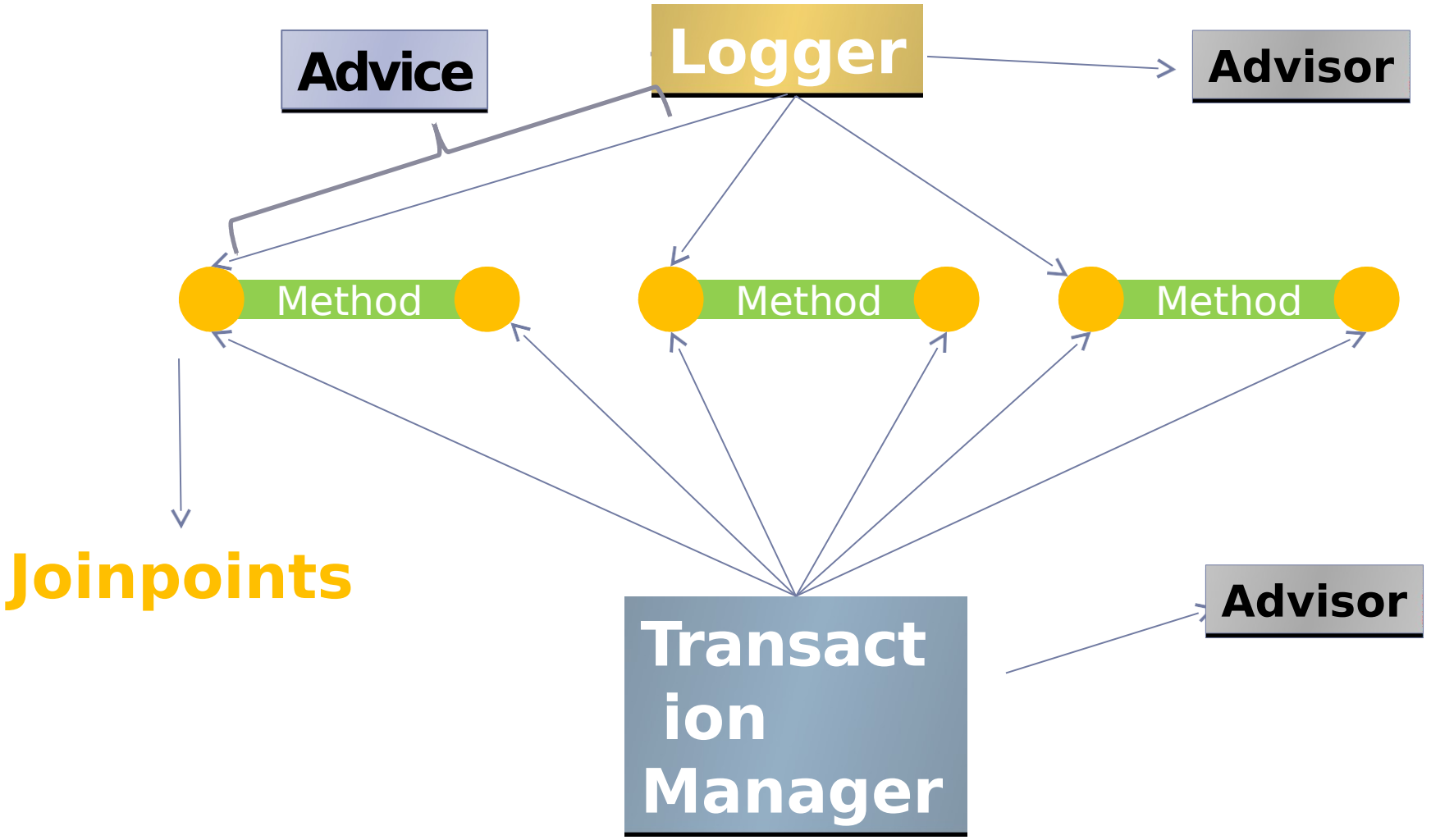
Aspect means
what (extra logic) and where it need to be applied (point cut)



AOP– Definitions.

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

AOP– Definitions.



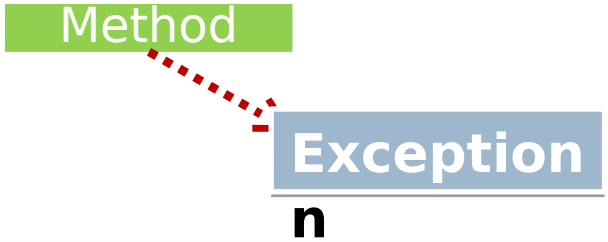
Advice Types

- Before Advice

- After returning Advice

- Around Advice

- Throws Advice



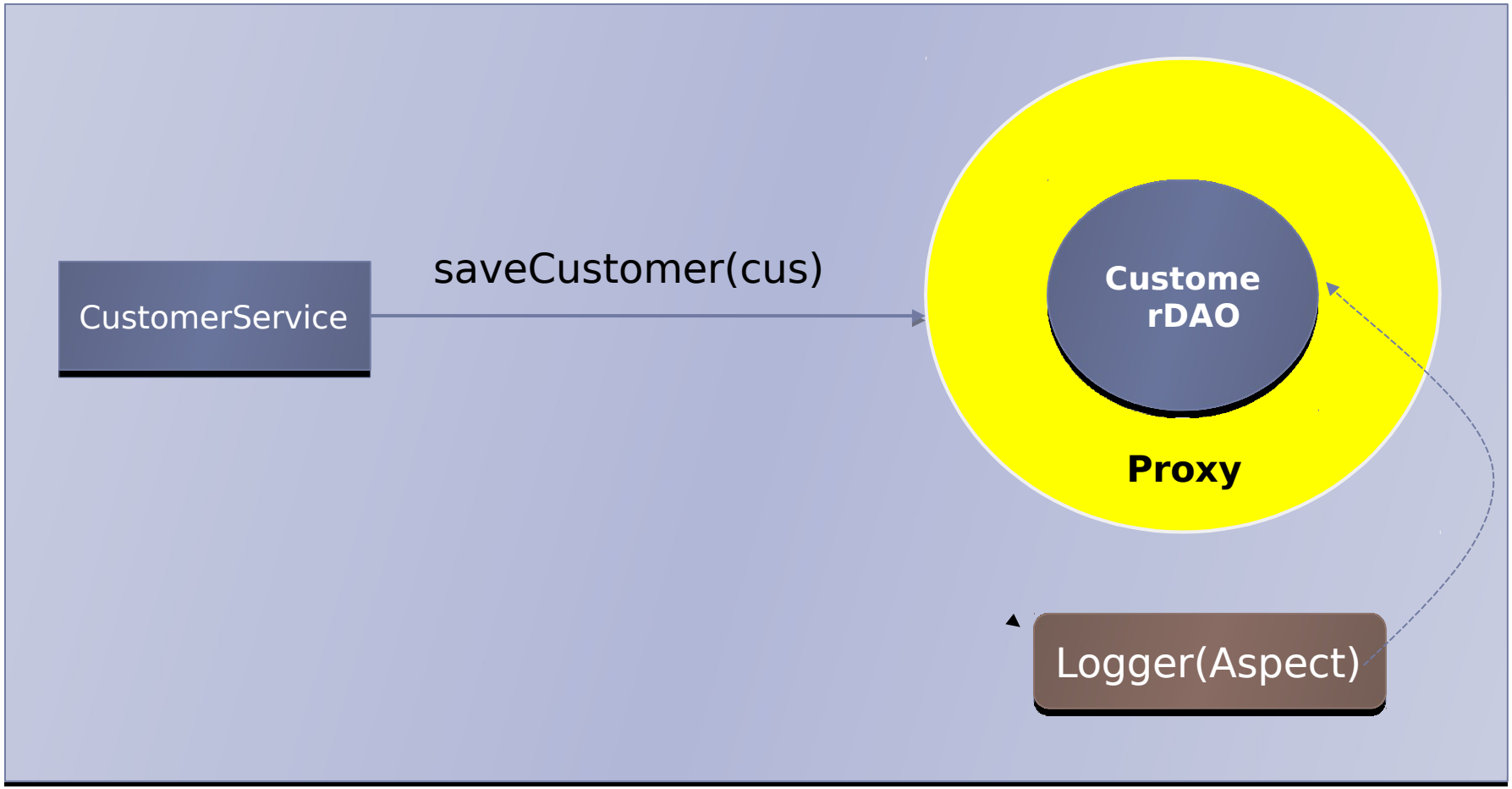
WEAVING

- 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:

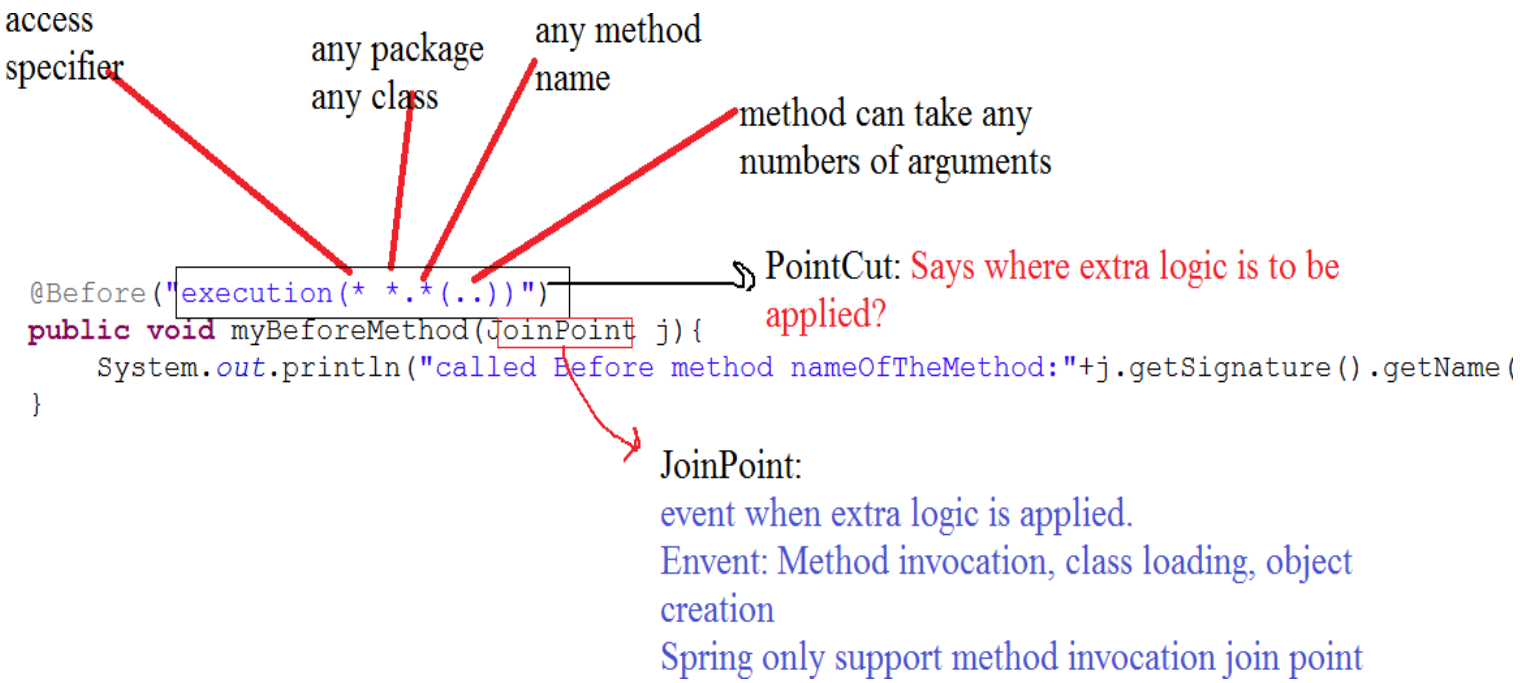
  - **Compile time** —Aspects are woven in when the target class is compiled.
  - **Classload time** —Aspects are woven in when the target class is loaded

  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

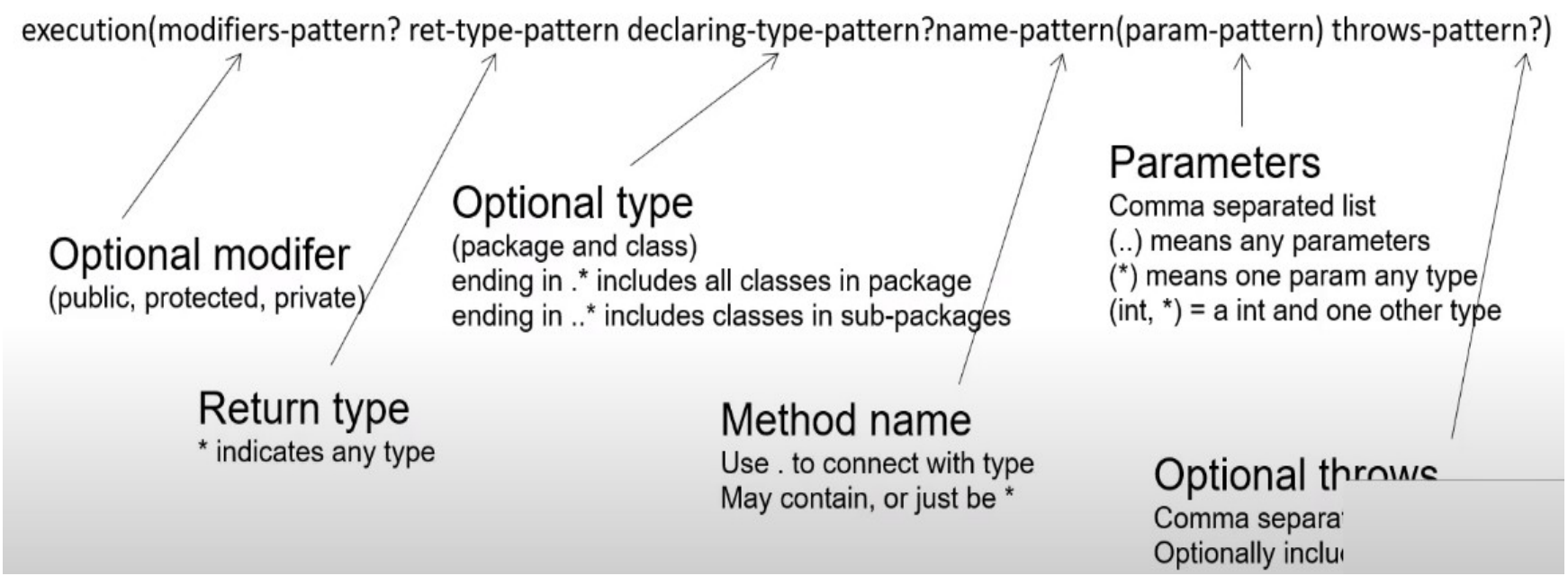

CustomerService
saveCustomer(cus)
Custome
rDAO
Proxy
Logger(Aspect)

Understanding Point Cut wildcard



Understanding Point Cut wildcard

- execution is the most used designator



Any questions?