

What Is Java EE?



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Previous Module

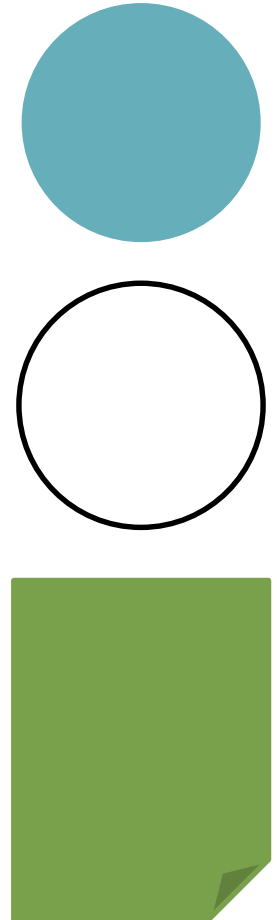
- Java ecosystem
- Java Enterprise Edition
- Quickly and easily develop an enterprise application
- Readable and maintainable code
- Programming model based on
 - Metadata
 - Convention over configuration

Module Outline

- Java EE architecture
- Container
- Components
- Services
- Implementations
- Demo

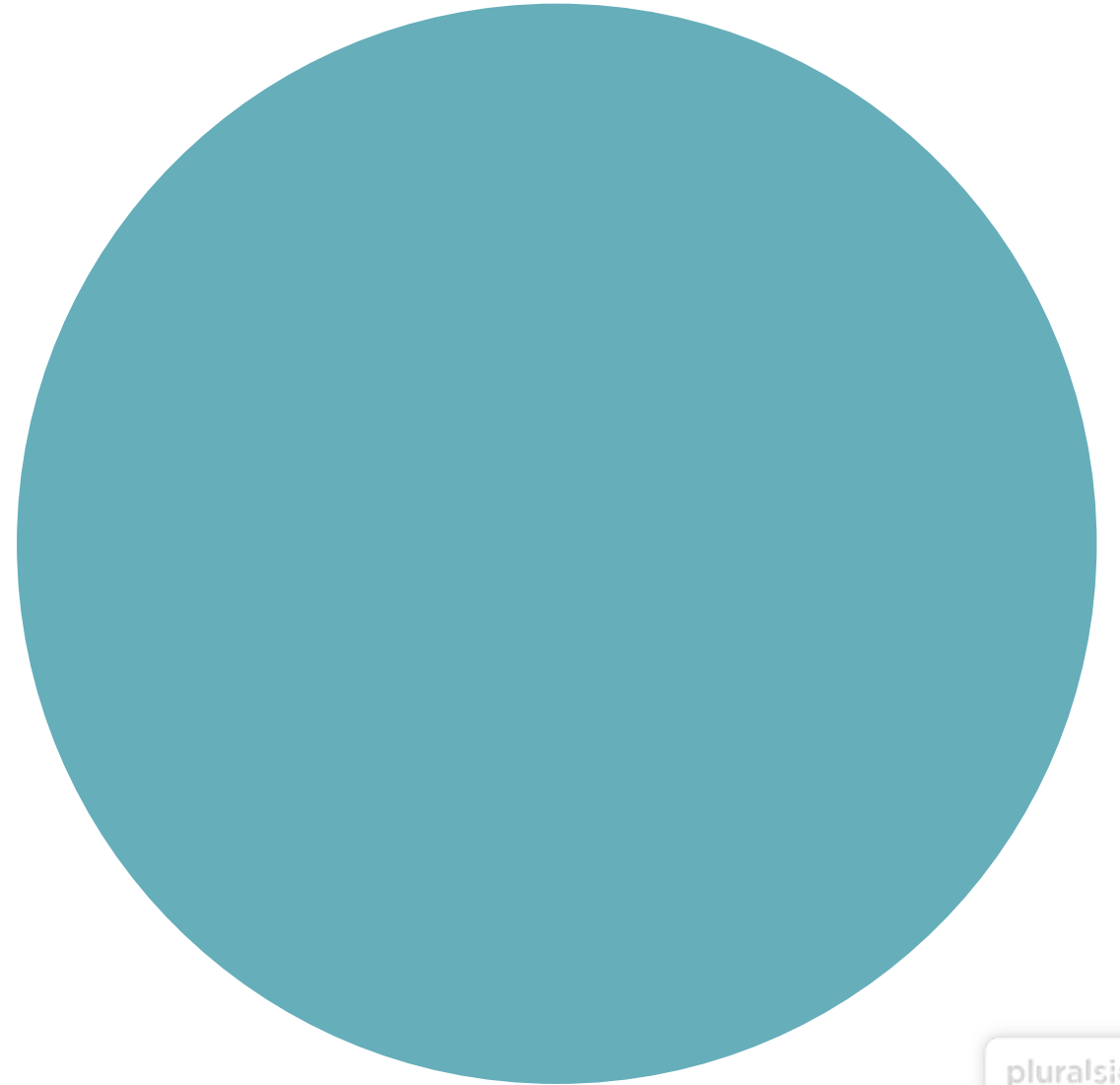
Java EE Architecture

- Container
- Services
- Components
- APIs
- Packaging
- Deployment
- Protocols
- Java SE APIs



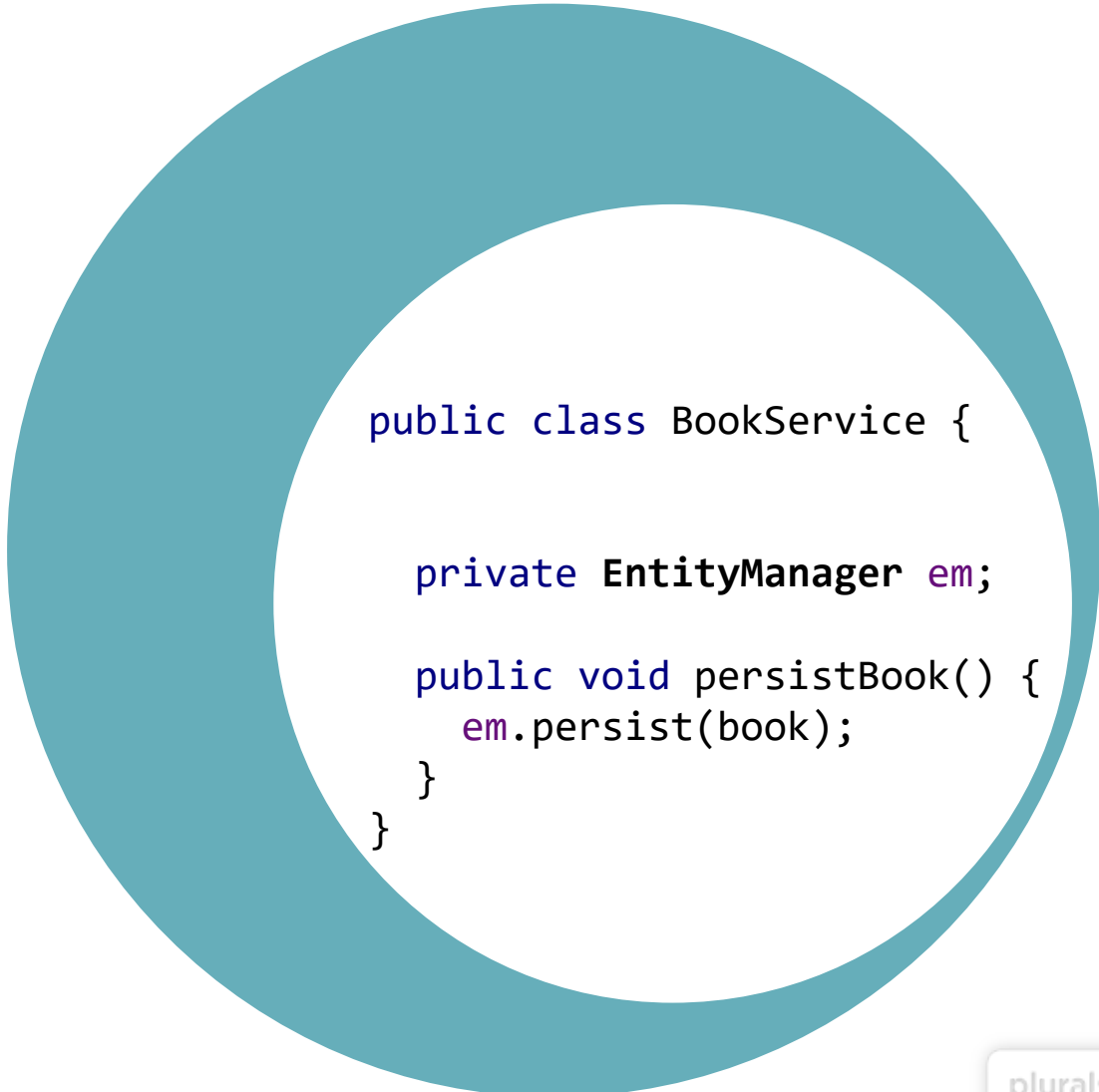
Container

- Runtime environment
- Hide technical complexity
- Enhance portability
- Host applications
- Handle complex low-level details
- Administrates the applications



Components

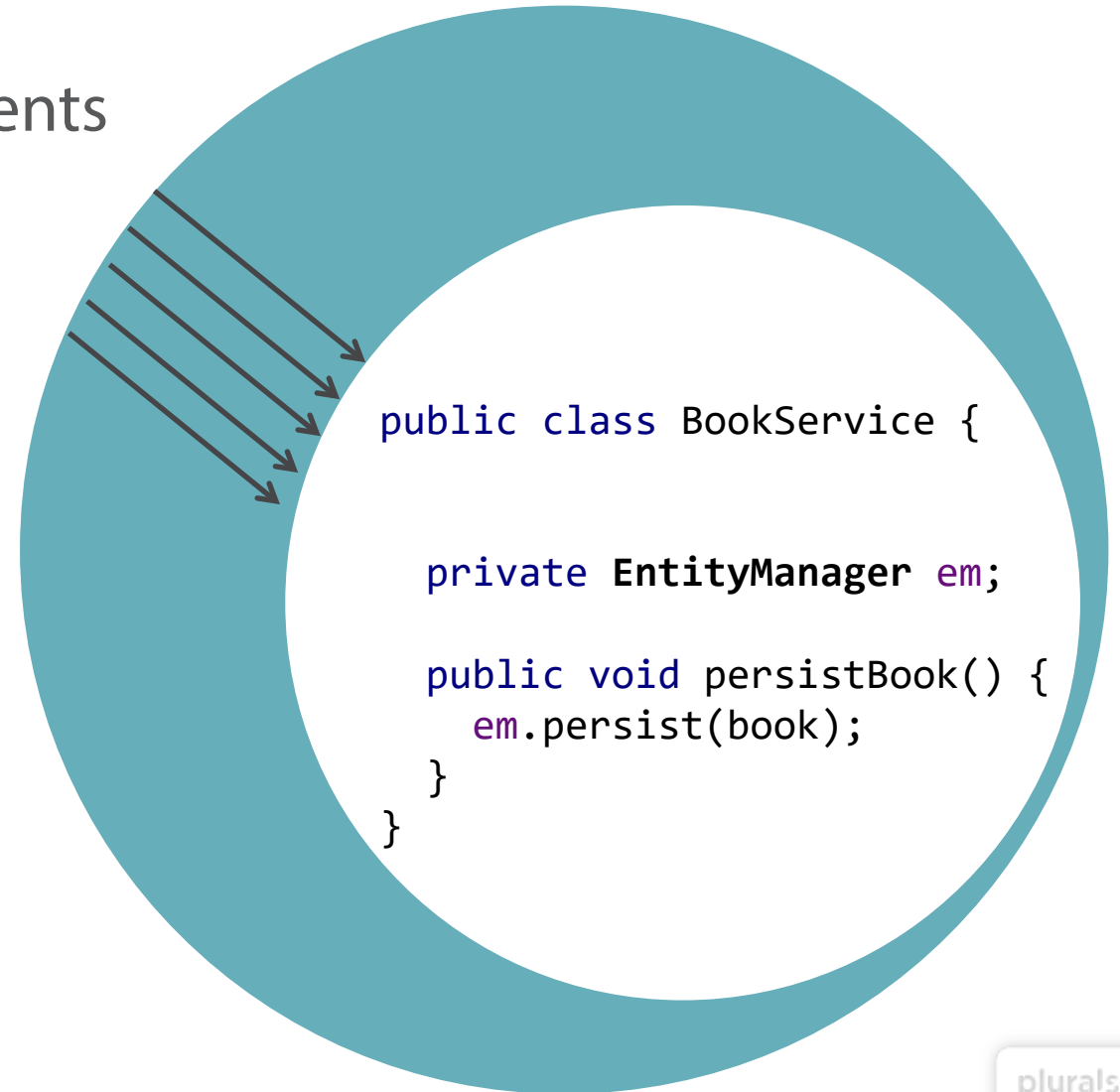
- Static or dynamic Web pages
- Server-side classes
- Handle business code
- Process data
- Access legacy systems



```
public class BookService {  
  
    private EntityManager em;  
  
    public void persistBook() {  
        em.persist(book);  
    }  
}
```

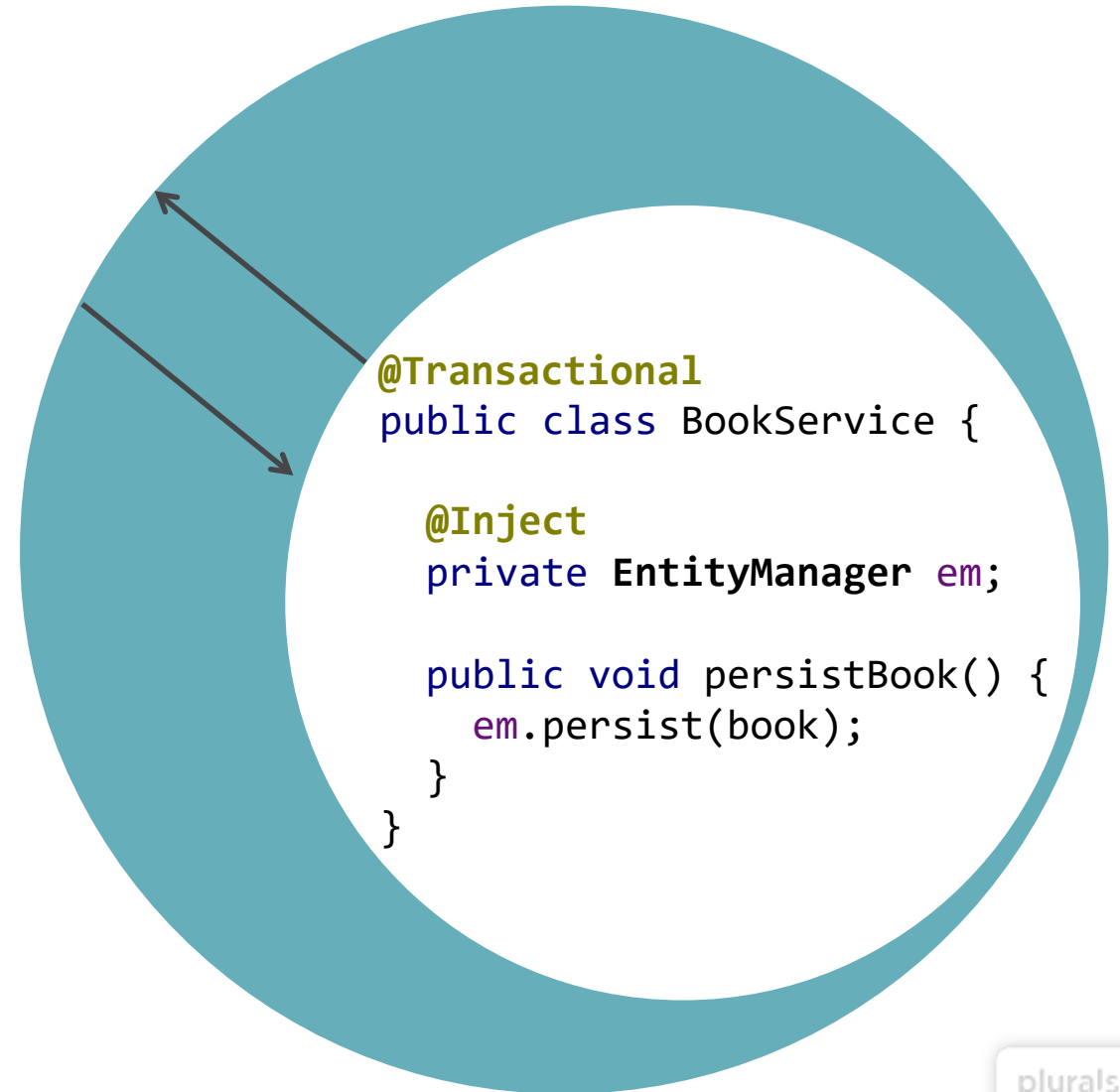
Services

- Container provides services to components
 - Security
 - Transaction management
 - Naming
 - Remote connectivity
 - ...
- Services are configurable
- Configuration is isolated



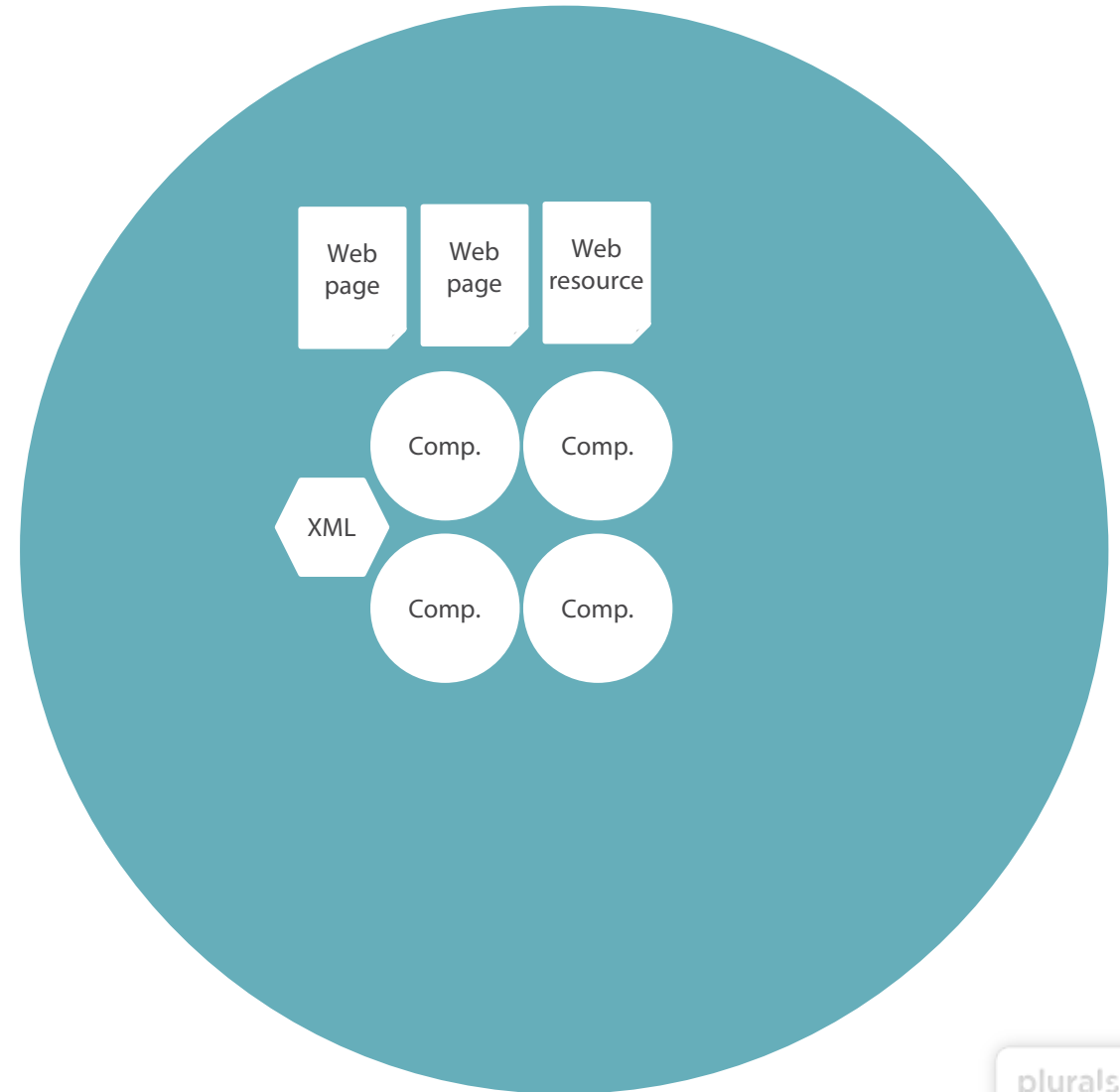
Metadata

- User code
- Metadata
- Annotation
- XML descriptor
- Inversion of control



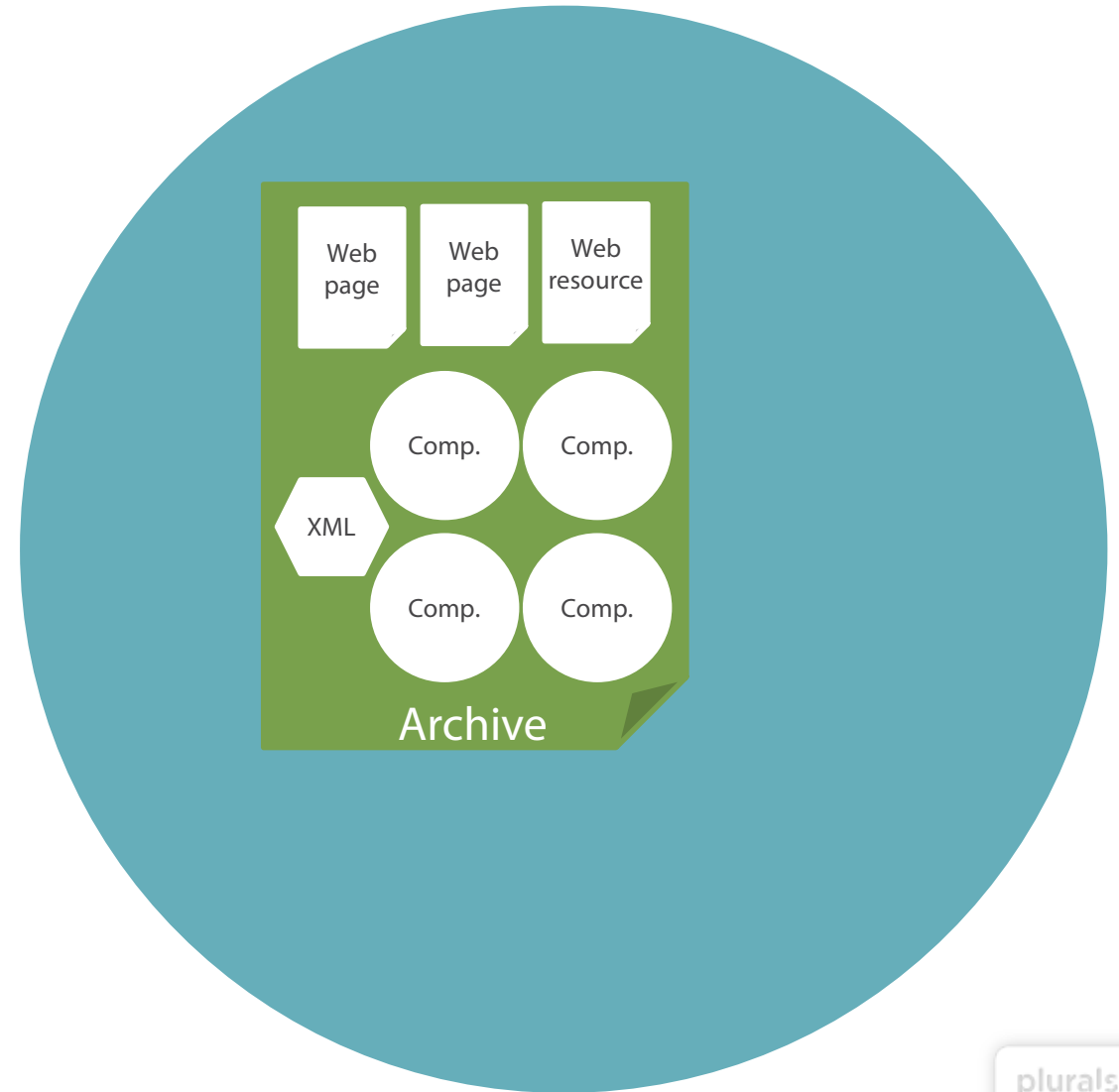
Application

- Aggregation of components
- Web pages
- Web resources
- Business components
- Database access components
- Deployment descriptors



Packaging

- Assemble components together
- Archive
- Deployment
- Standard format



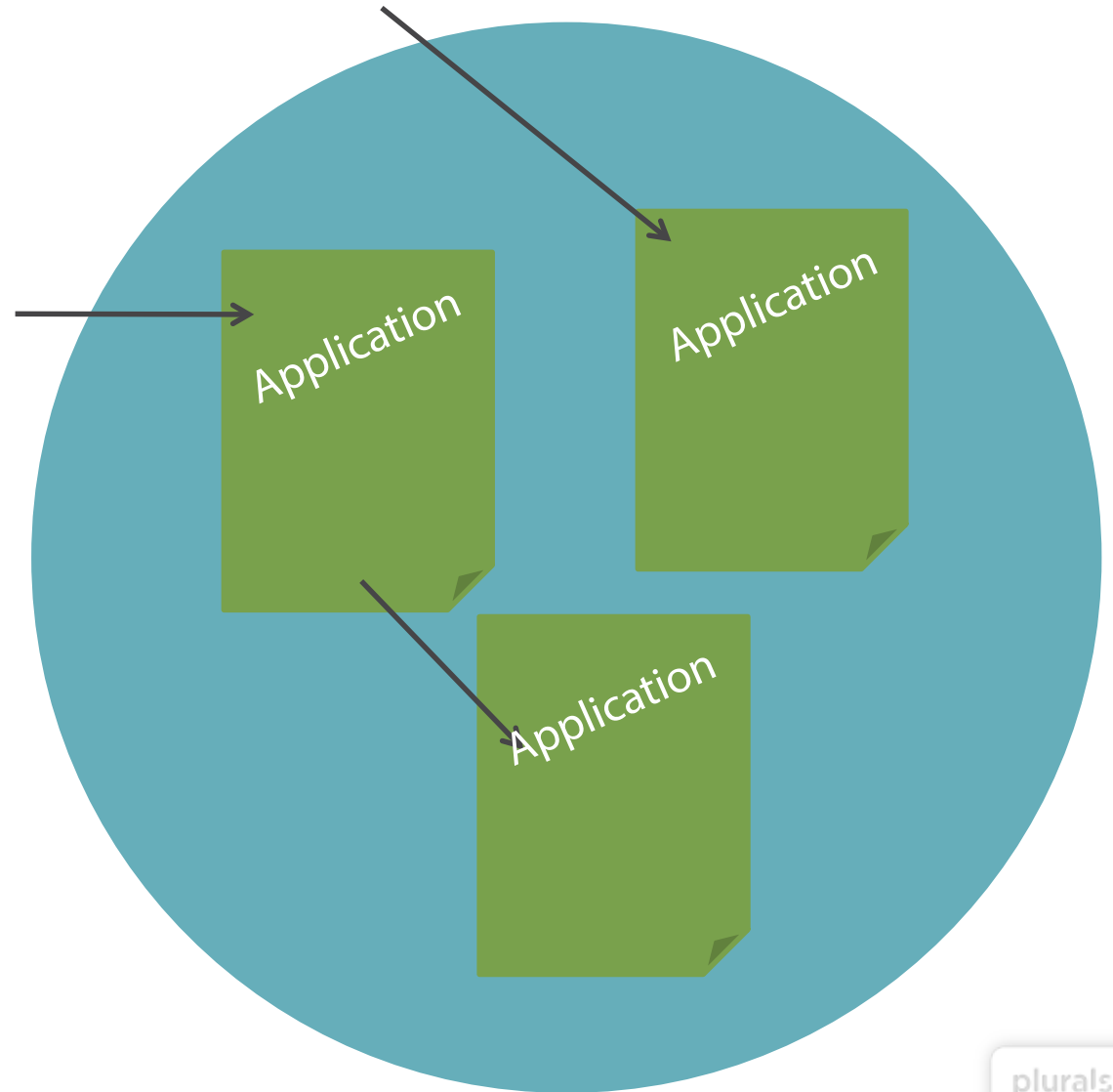
Applications

- Deploy several applications
- Isolation
 - Own resources
 - Own components
 - Own class-loader
- Administration



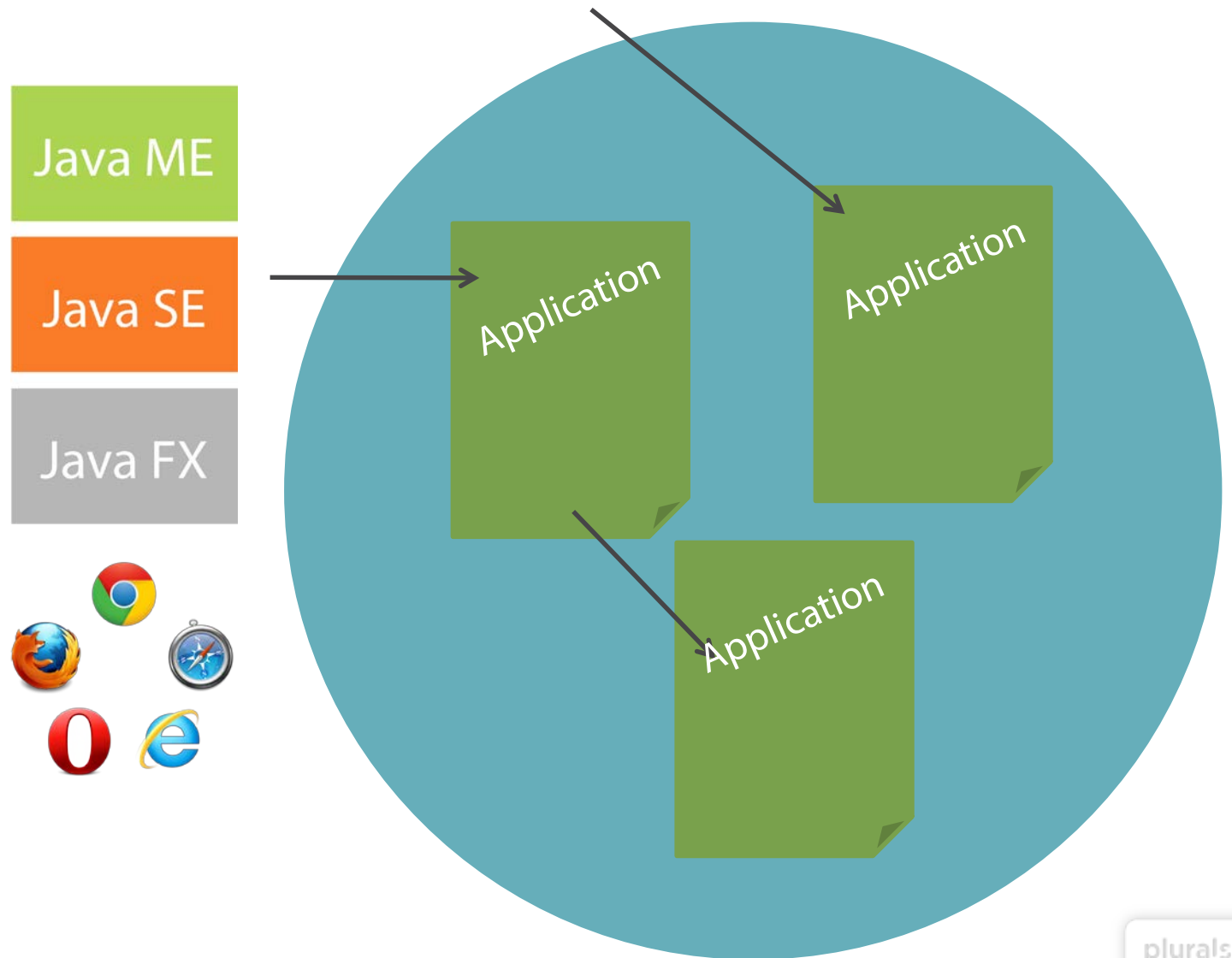
Protocols

- HTTP
- HTTPS (SSL)
- RMI/IIOP
 - Remote Method Invocation
 - Internet Inter-ORB Protocol
 - CORBA
 - Ada, C, C++, Cobol...



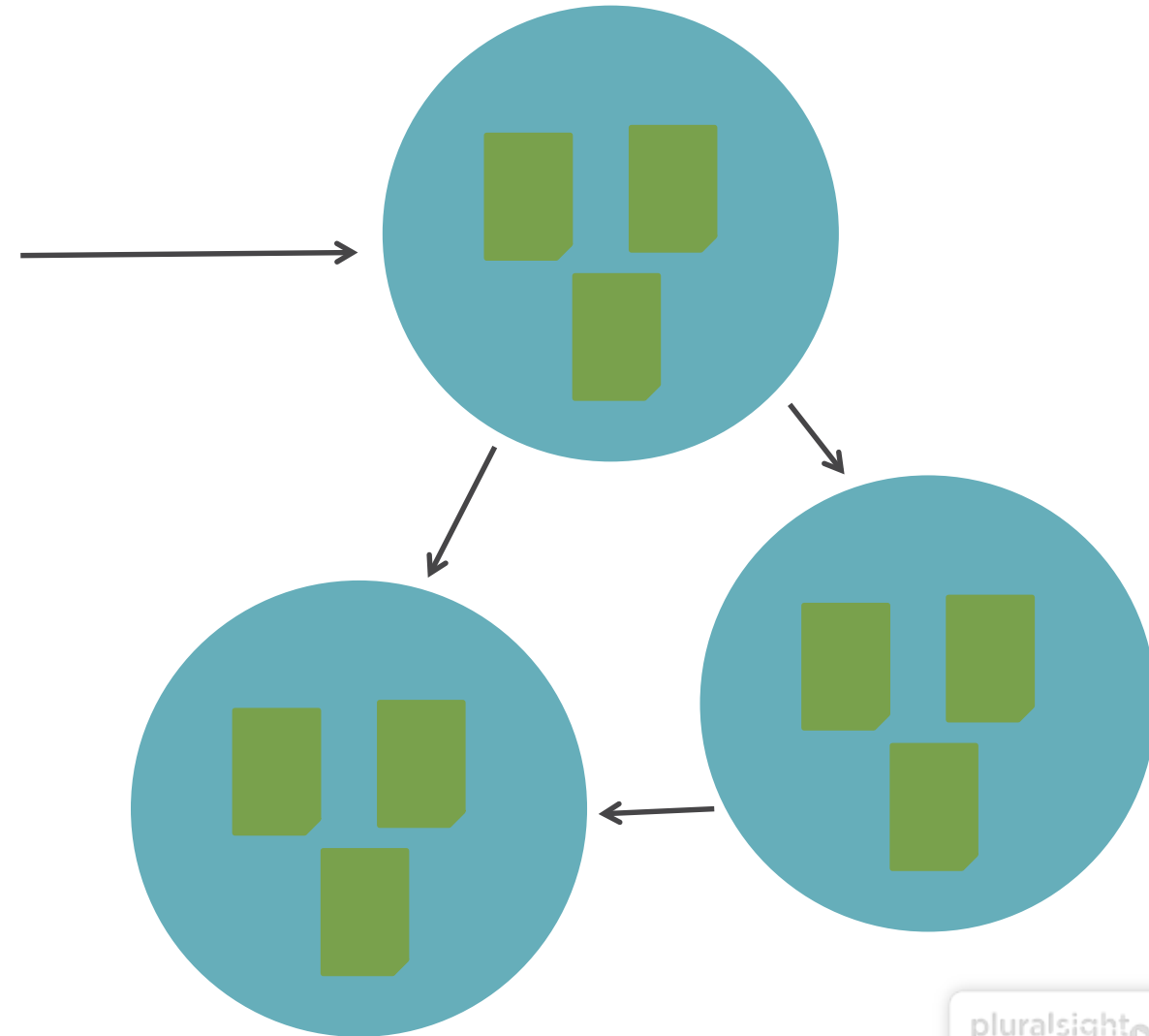
Clients

- Web clients
- Web applications
- REST / SOAP services
- Mobile apps
- B2B



Distribution

- Distributed application
- Load balancing
- Fail over
- Scalability
- Availability



Java EE Services

Java EE

Java SE

Java EE Services

Java EE

Java SE

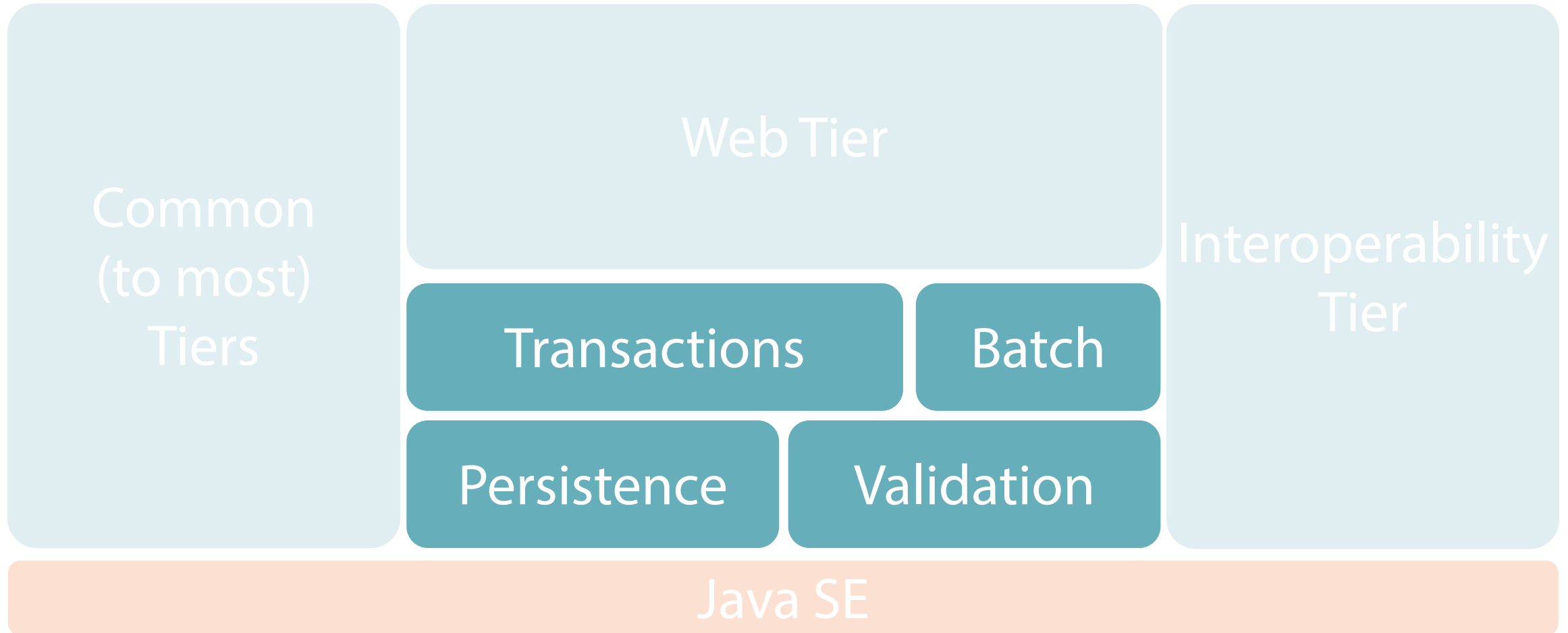
Java EE Services



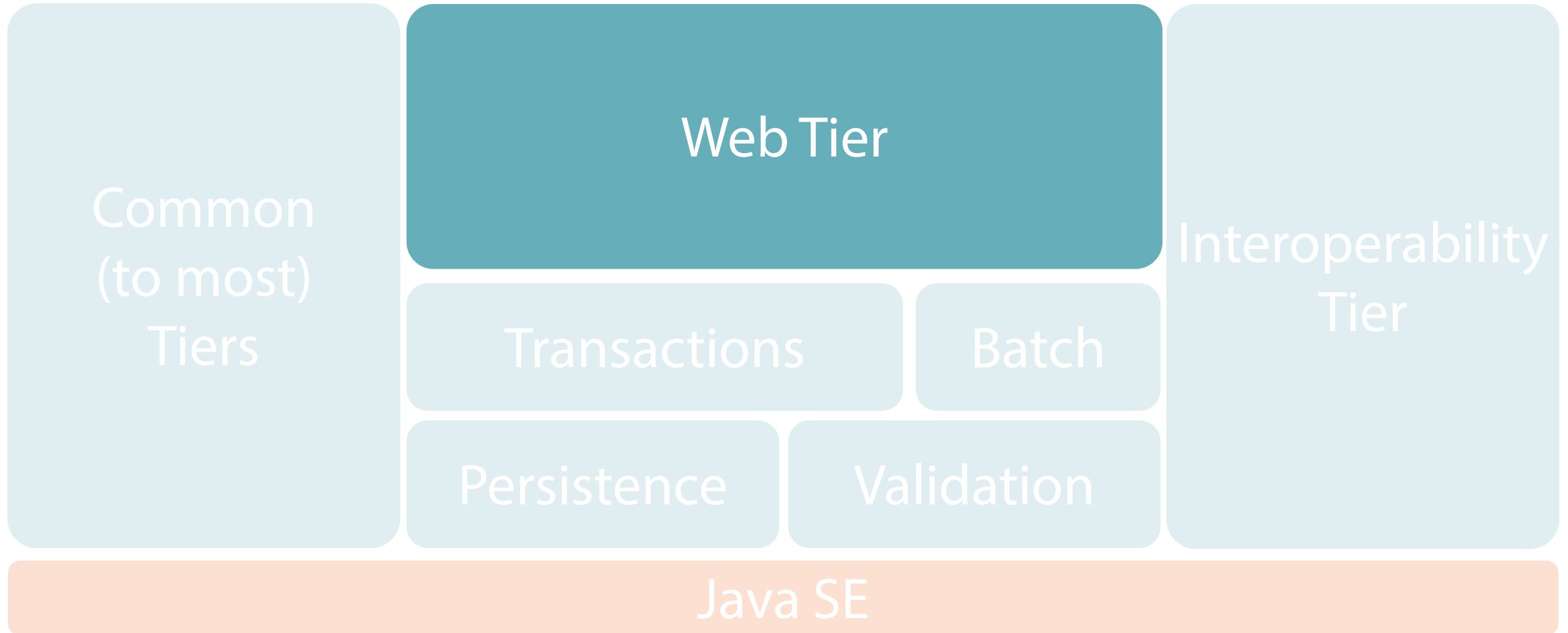
Business Tier Services



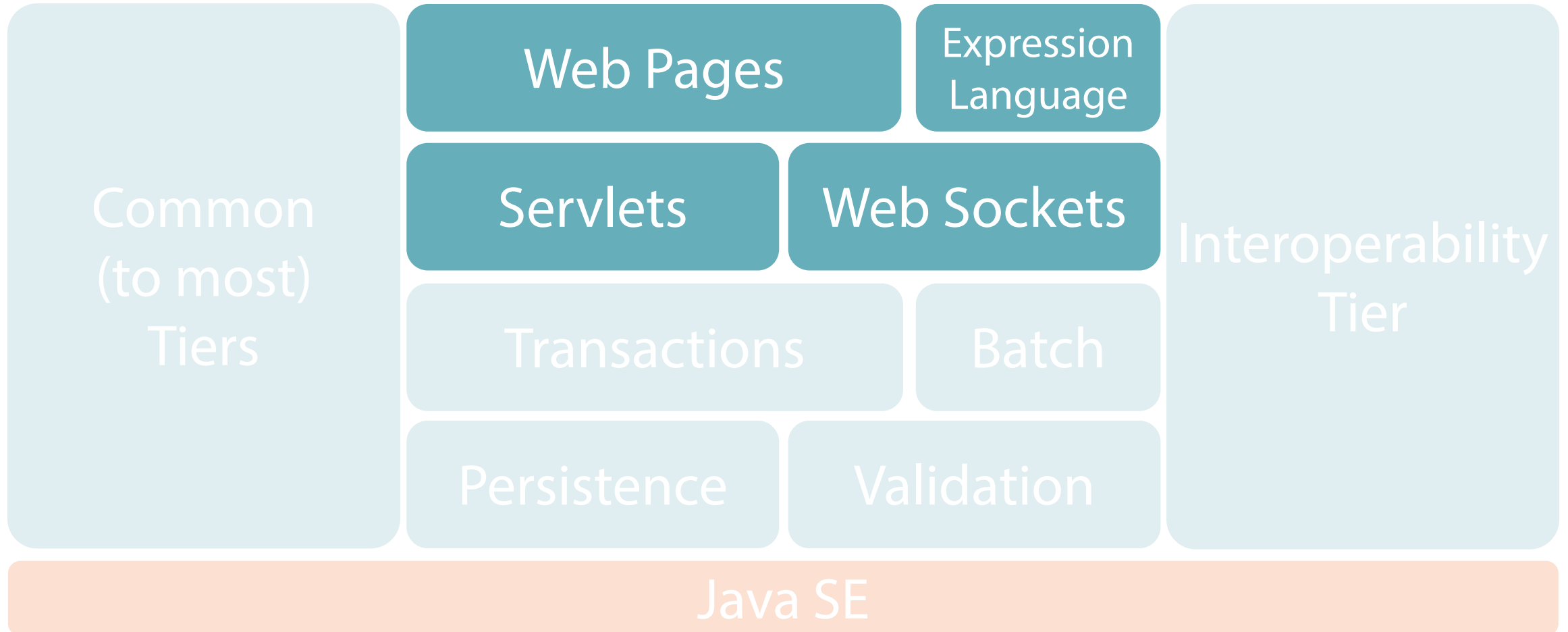
Business Tier Services



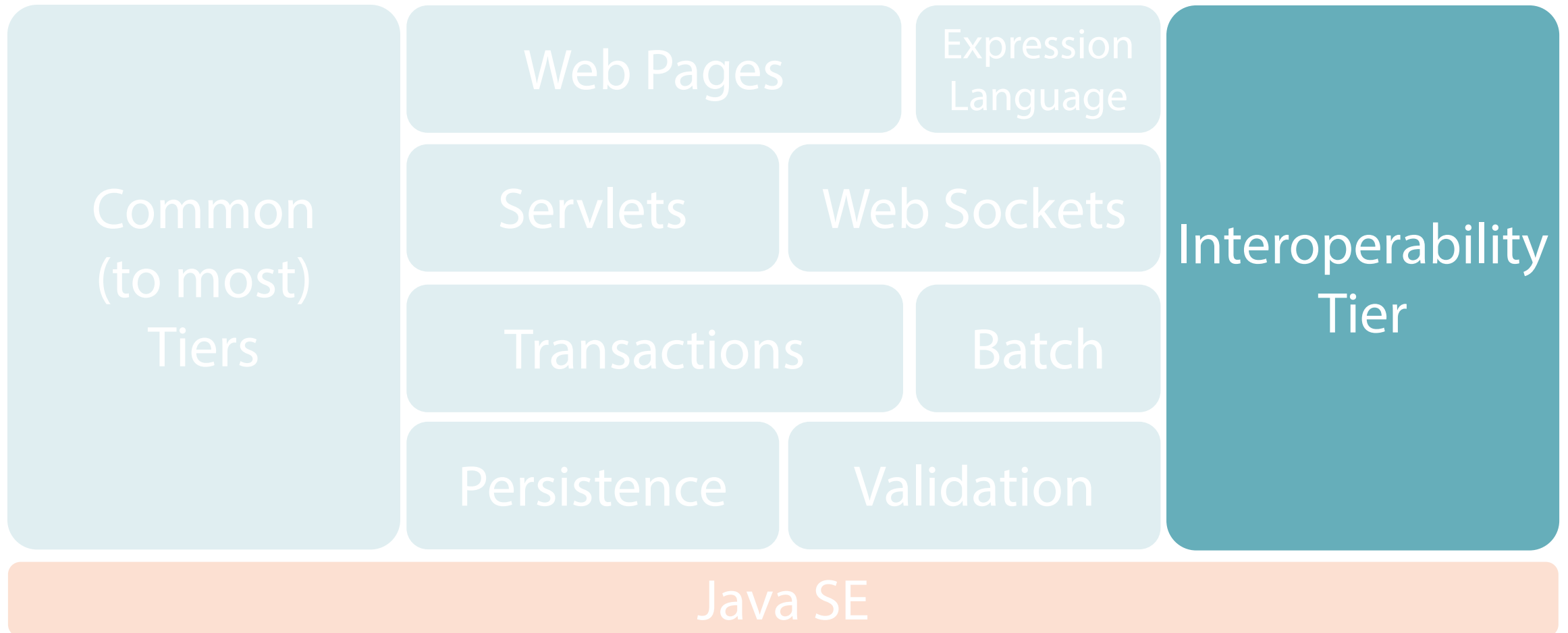
Web Tier Services



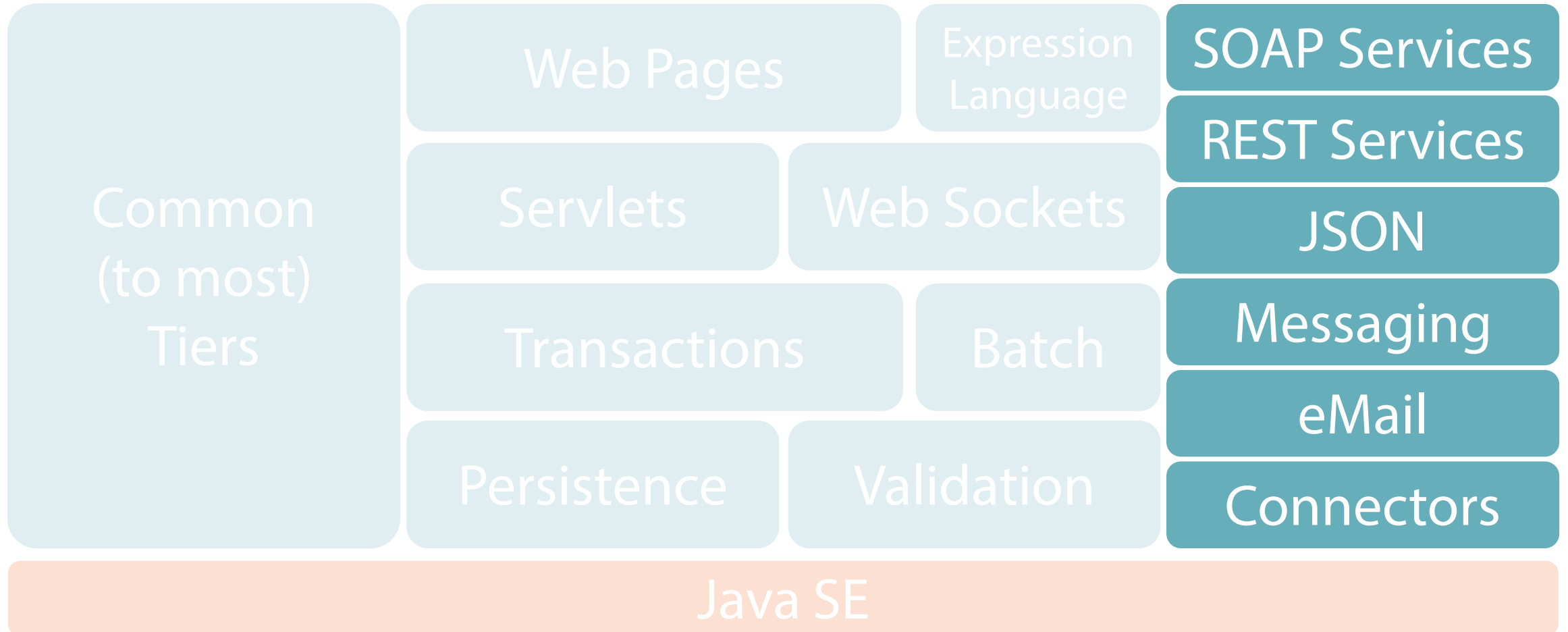
Web Tier Services



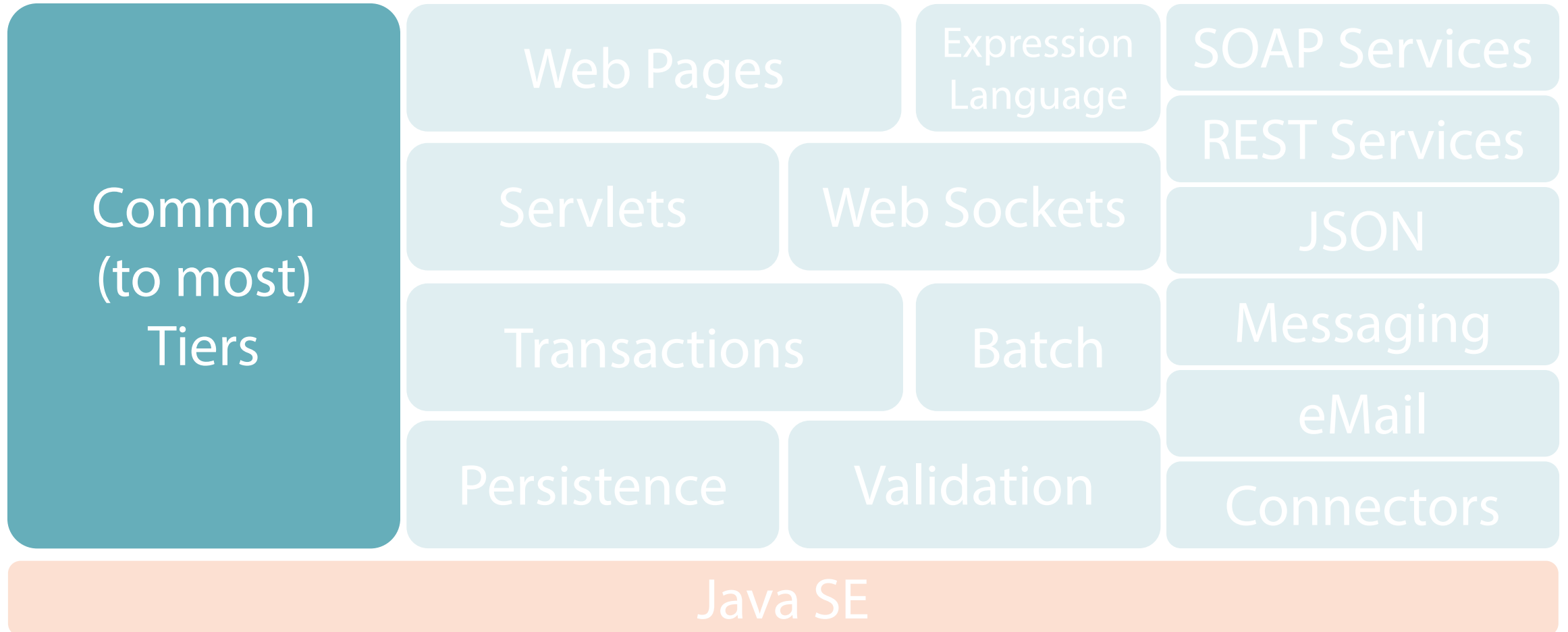
Interoperability Services



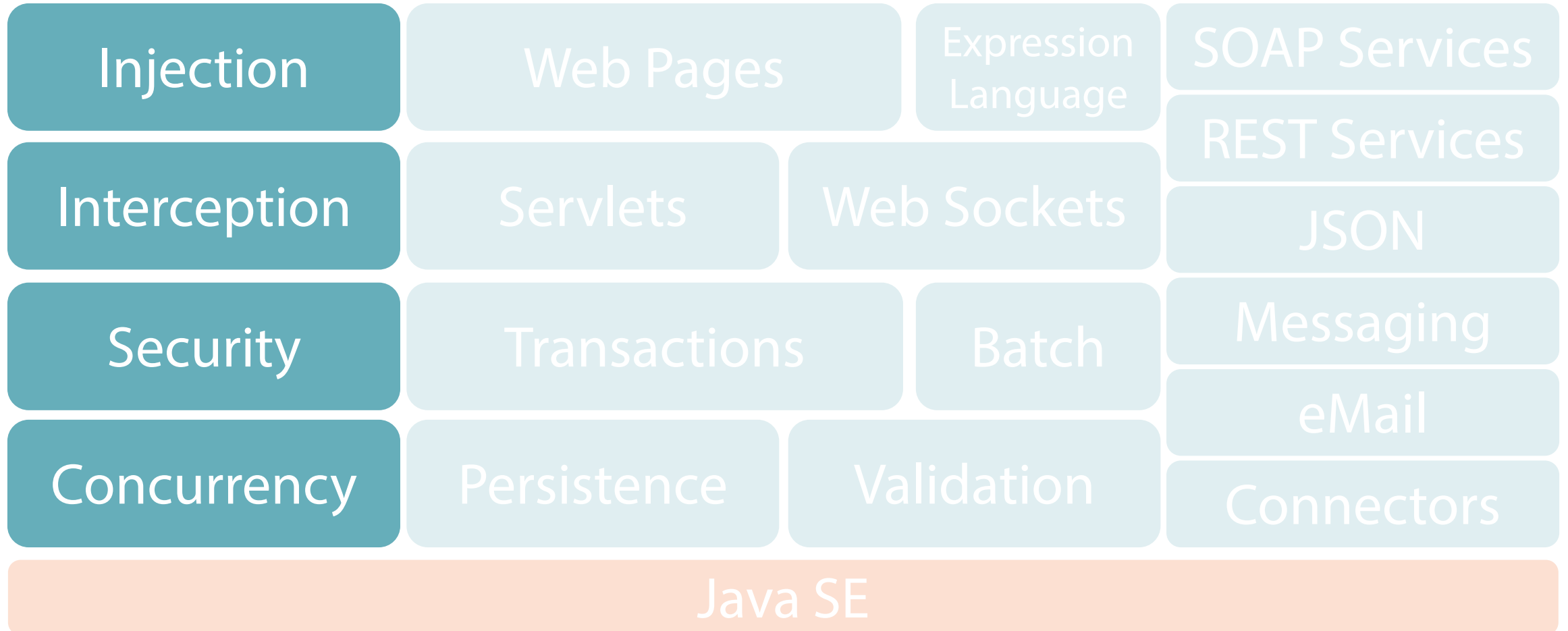
Interoperability Services



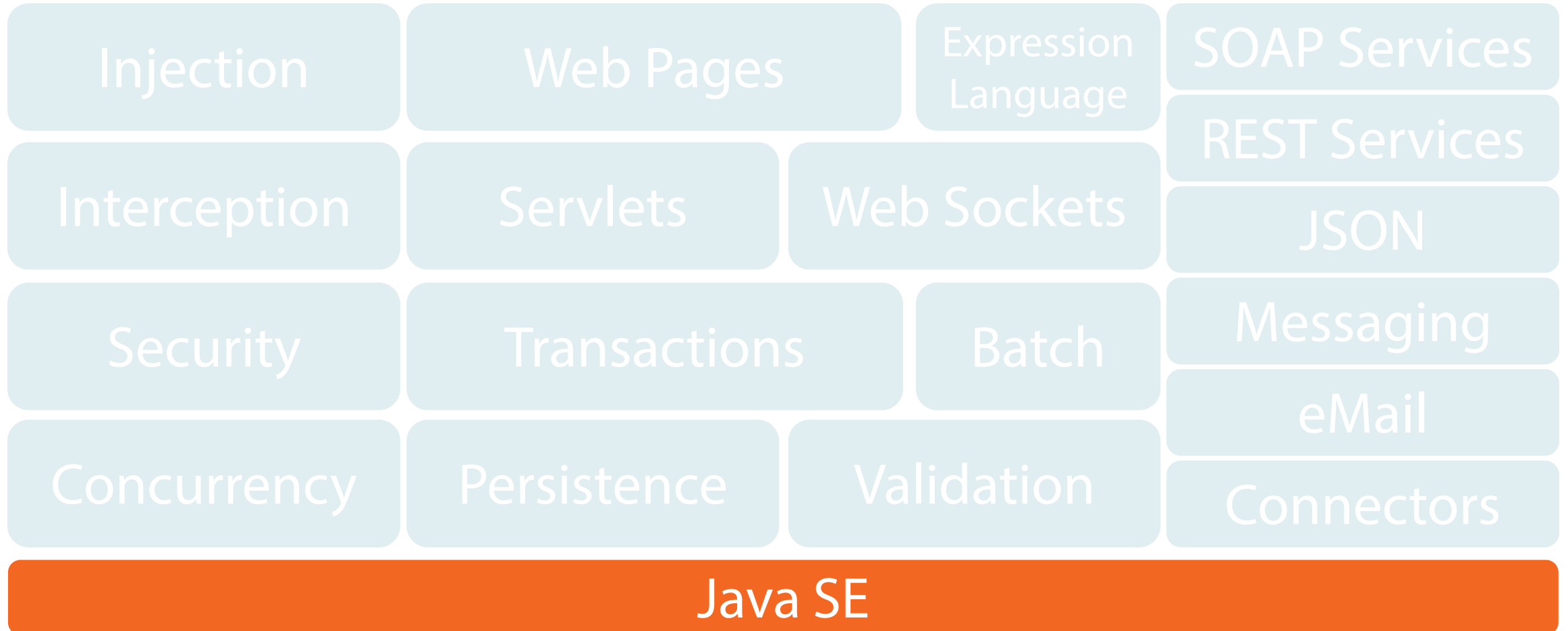
Common Services



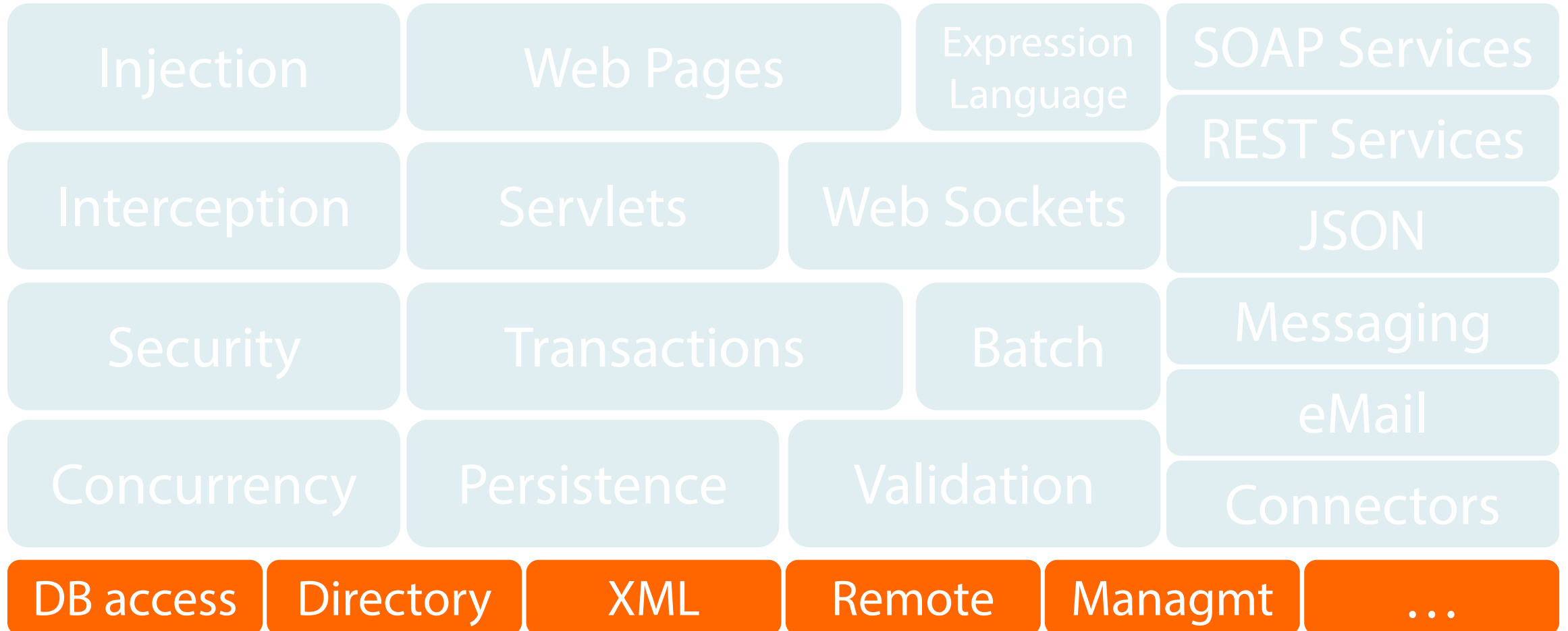
Common Services



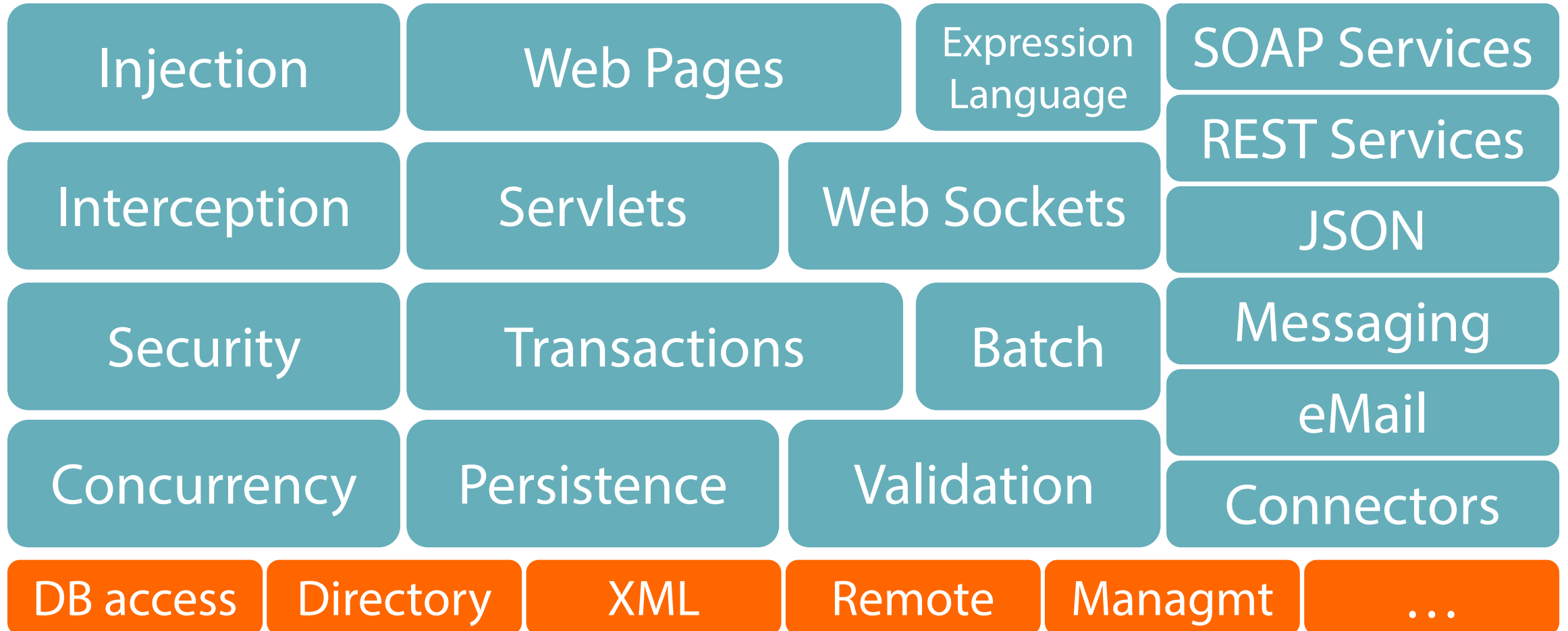
Java SE Services



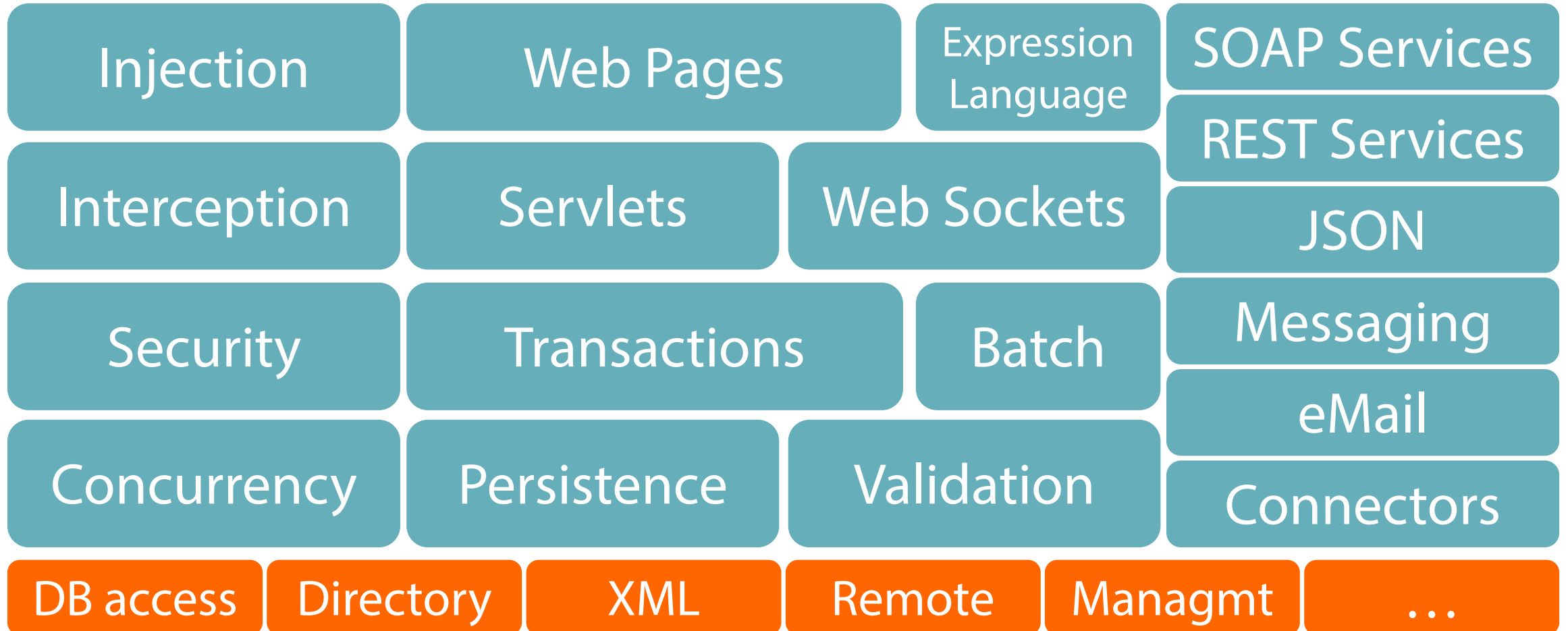
Java SE Services



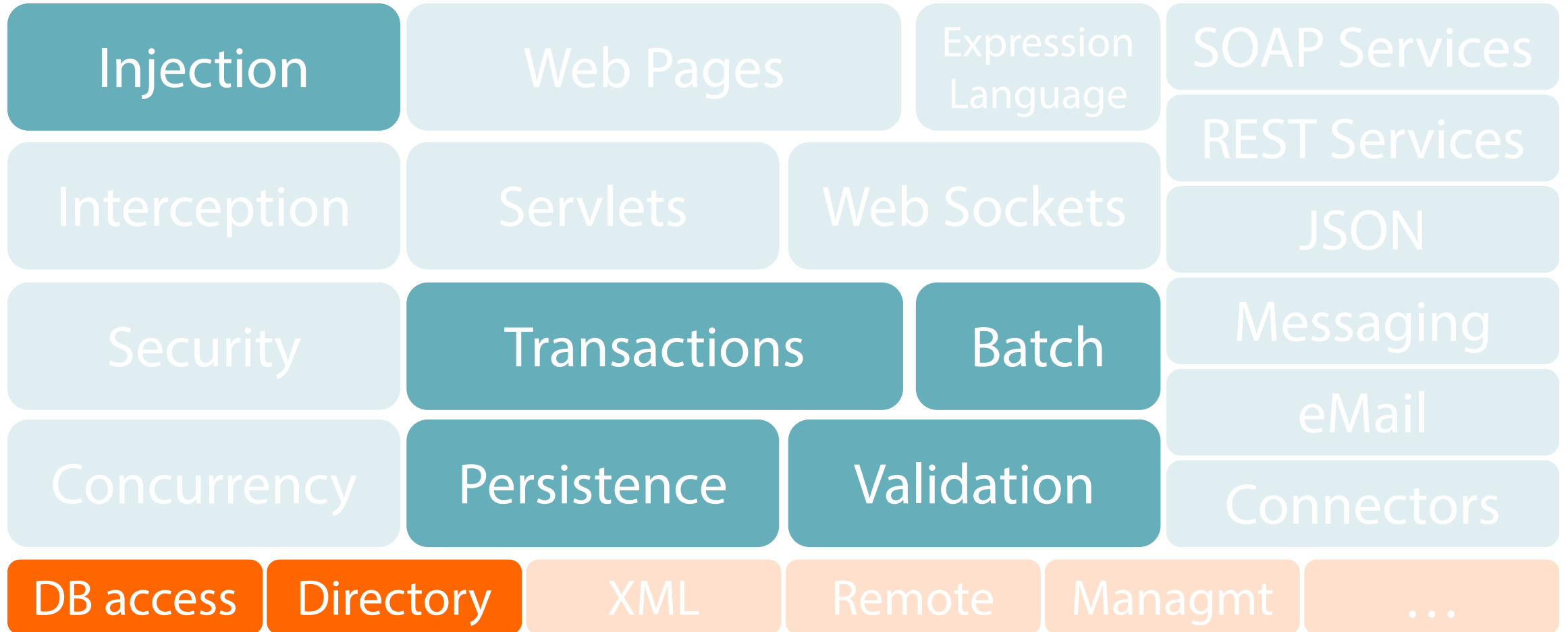
Overall Services Picture



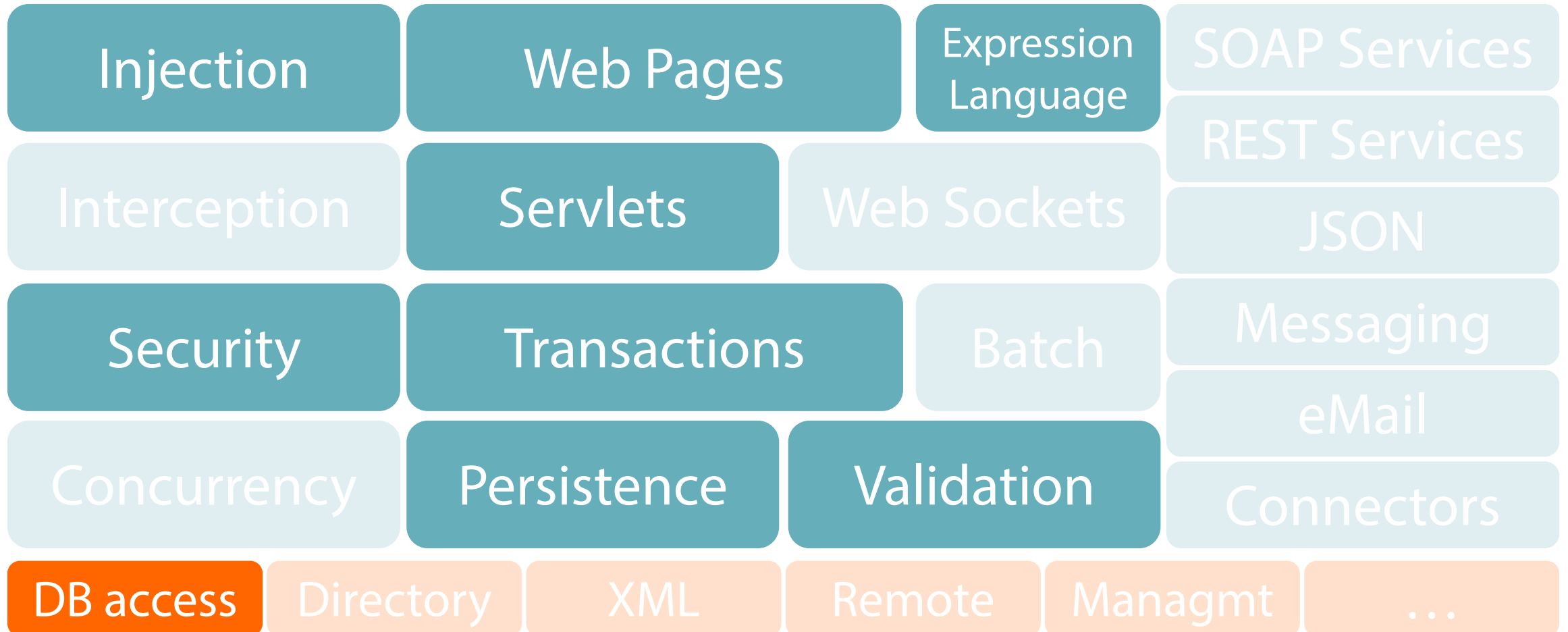
Modular



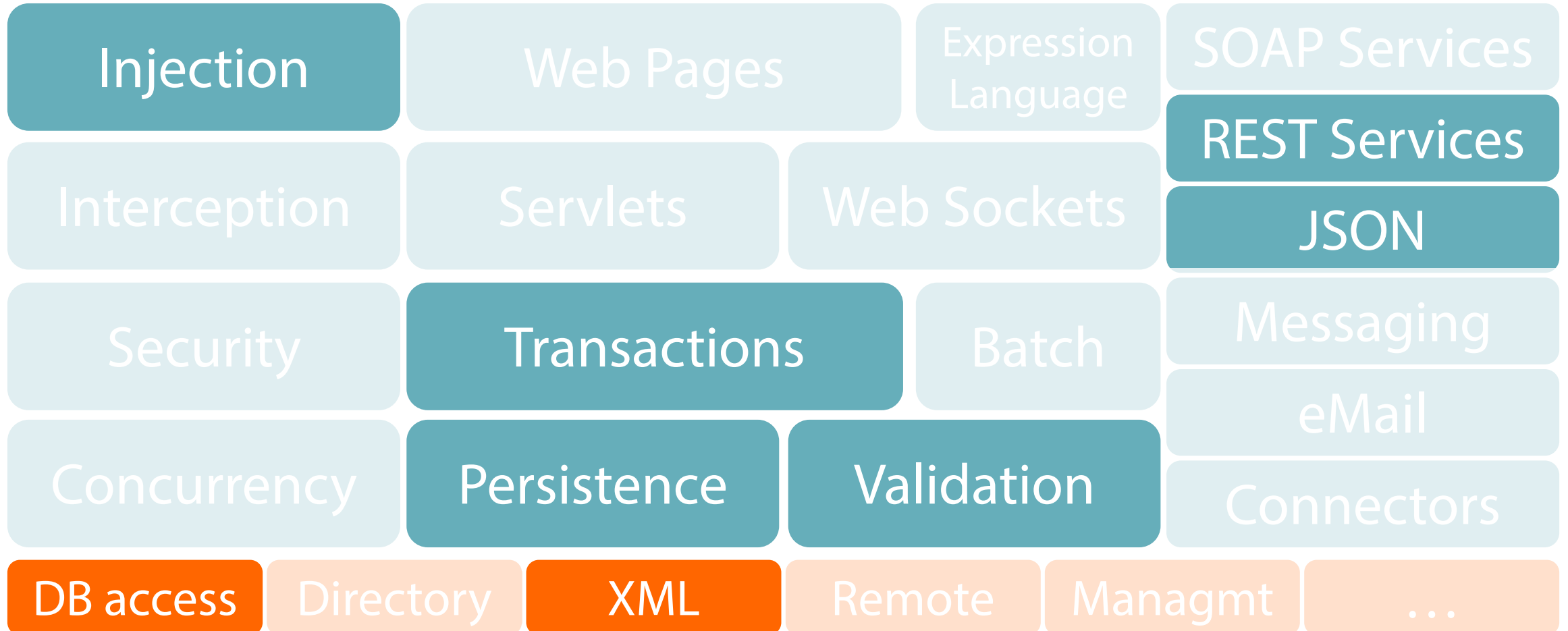
Batch Application



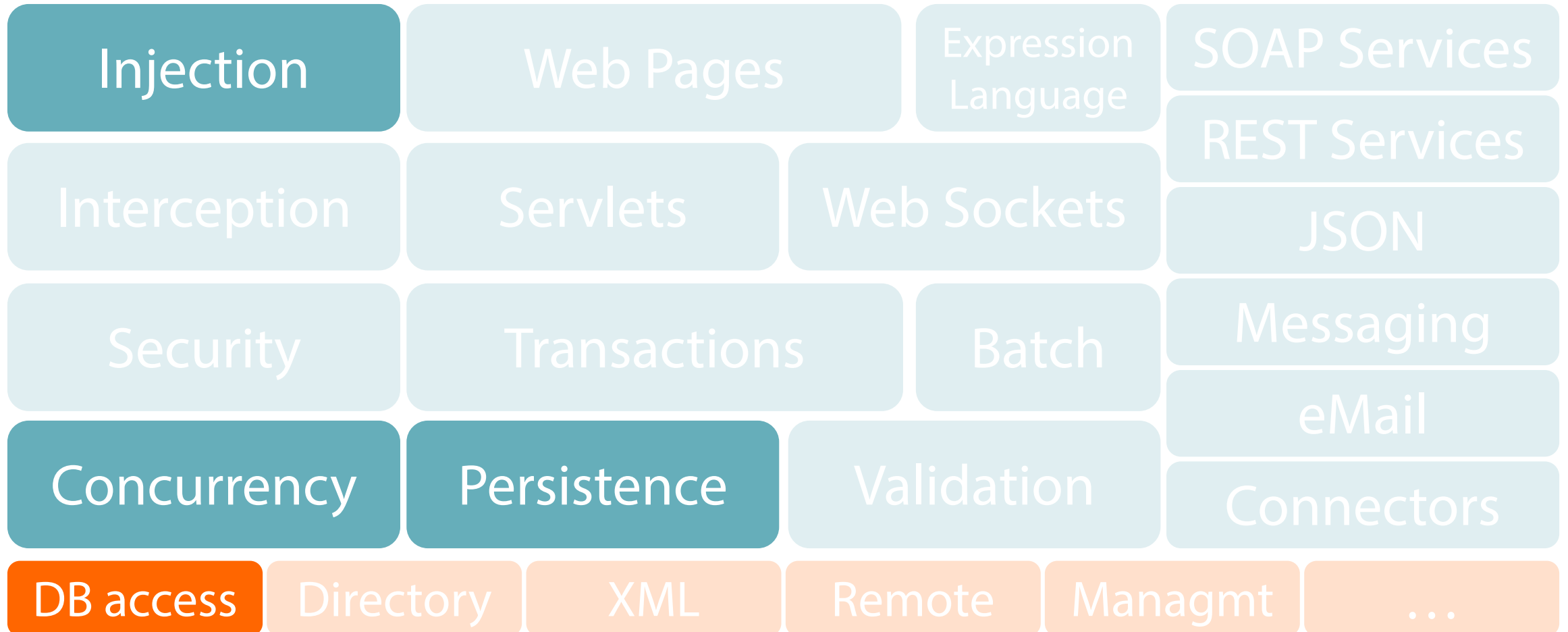
Web Application



Rest Application

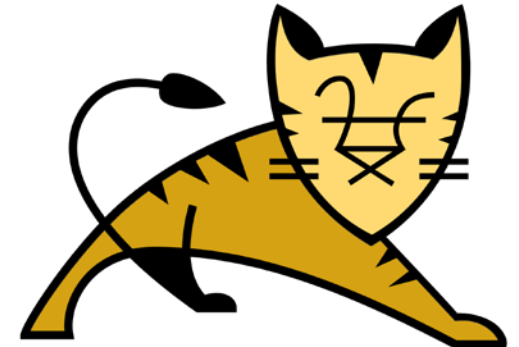


Concurrent Application



Java EE in Action

- Container
- Open source
- Commercial



ORACLE®
WebLogic Server



Demo: CD-Book Store

E-commerce web application

Books and CDs

Authentication

REST interface



Summary

- Package components
- Runtime container
- Services
 - Business tier, web tier...
 - Common to most of tiers
- Protocols

What's Next

- IT challenges
- Technical concerns
- Business concerns