

Putting It All Together



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Previous Module



Interoperability tier

XML and JSON

RESTful Web Services

Messaging

Module Outline



Java EE services

Tiered application

Modularity and flexibility

References

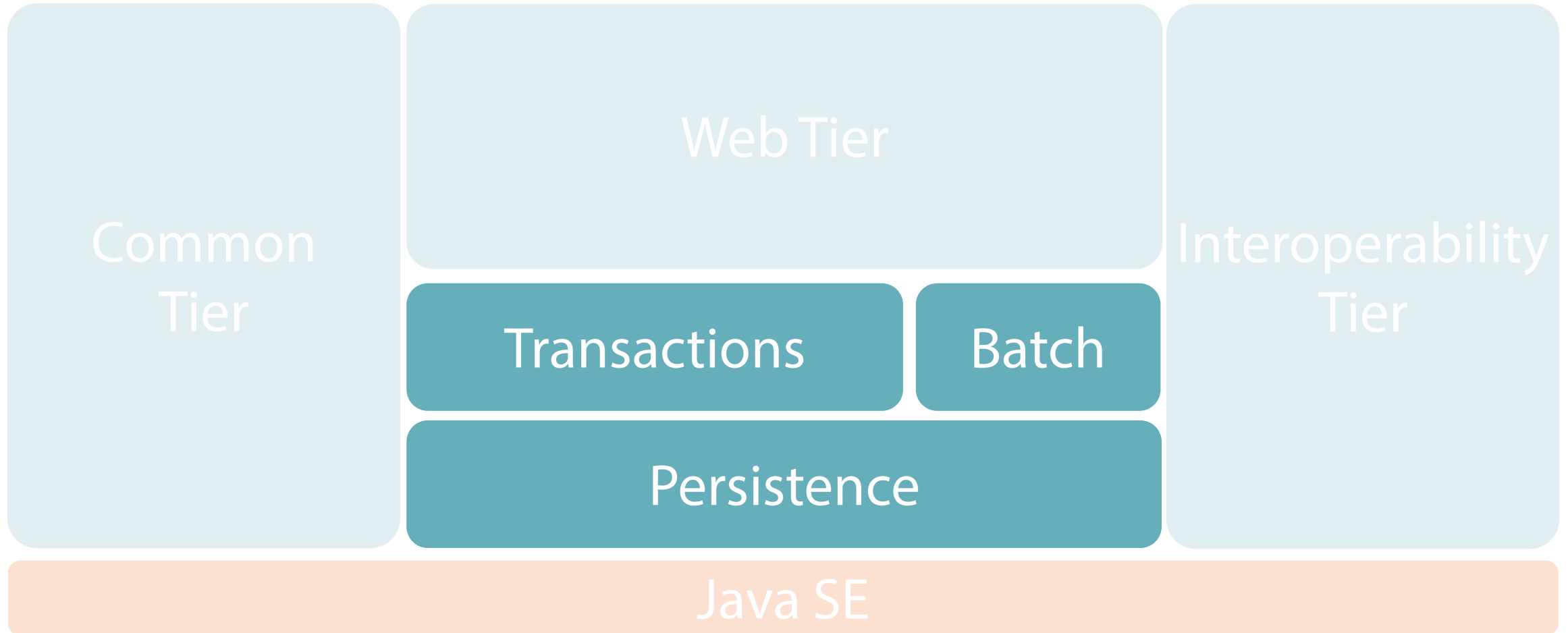
Tiered Architecture



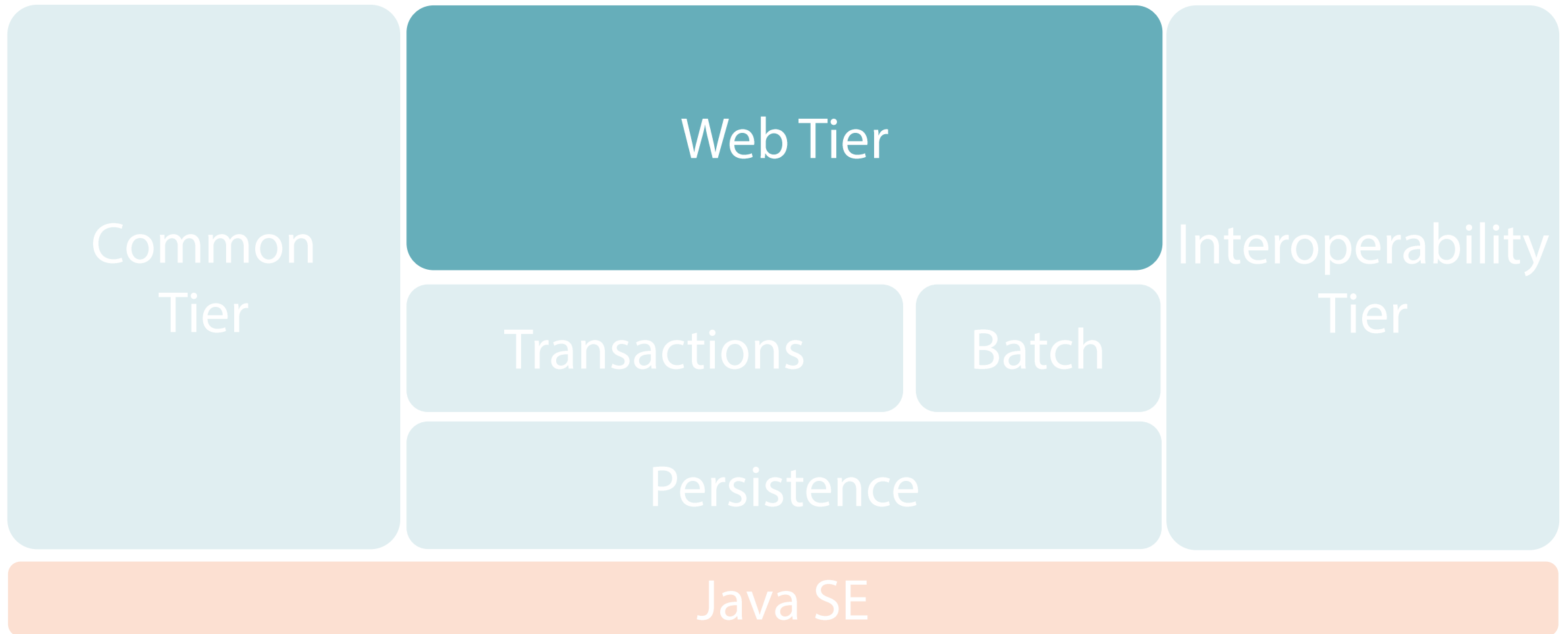
Business Tier



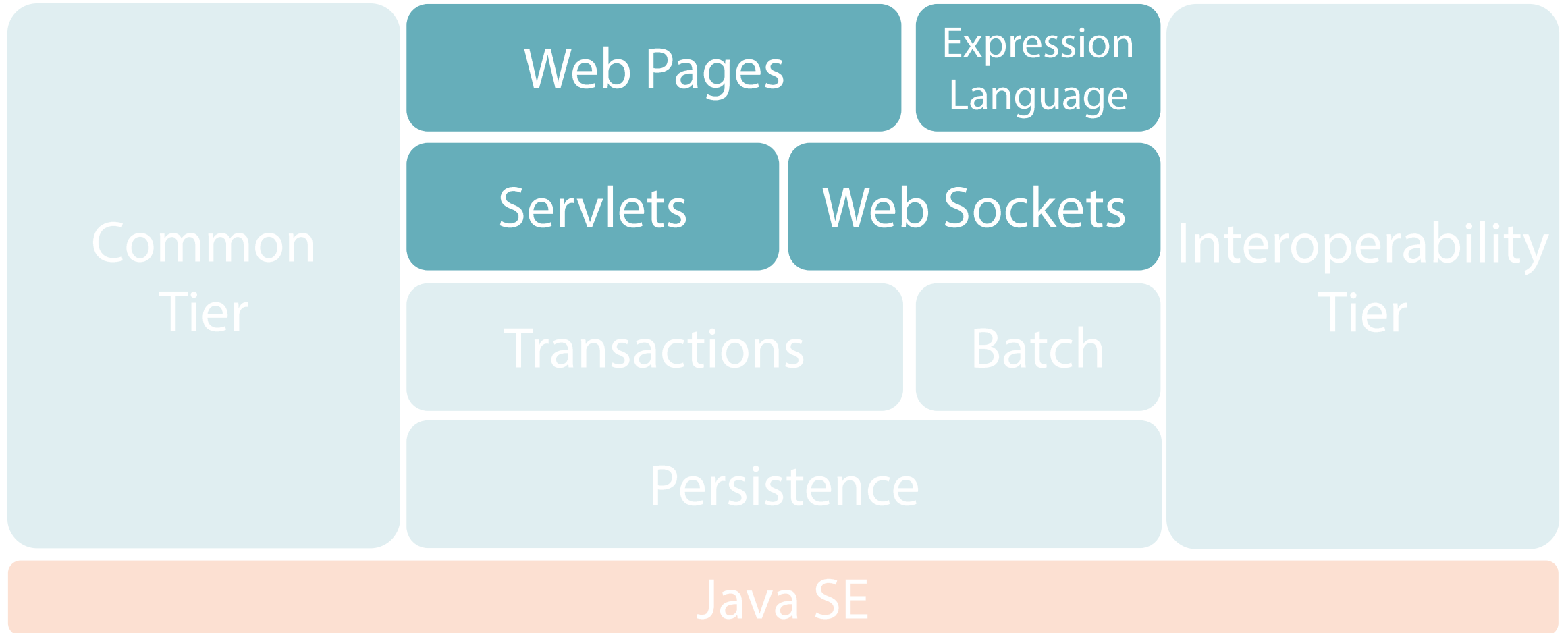
Business Tier



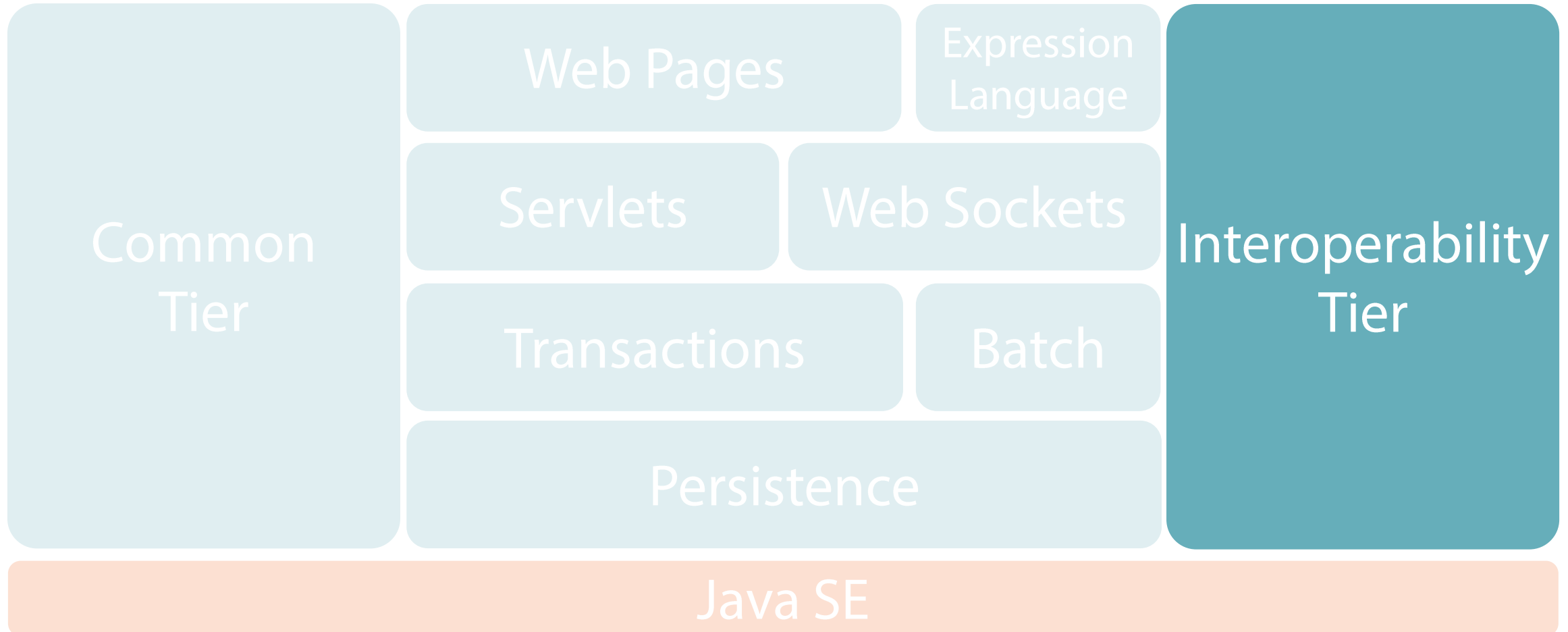
Web Tier



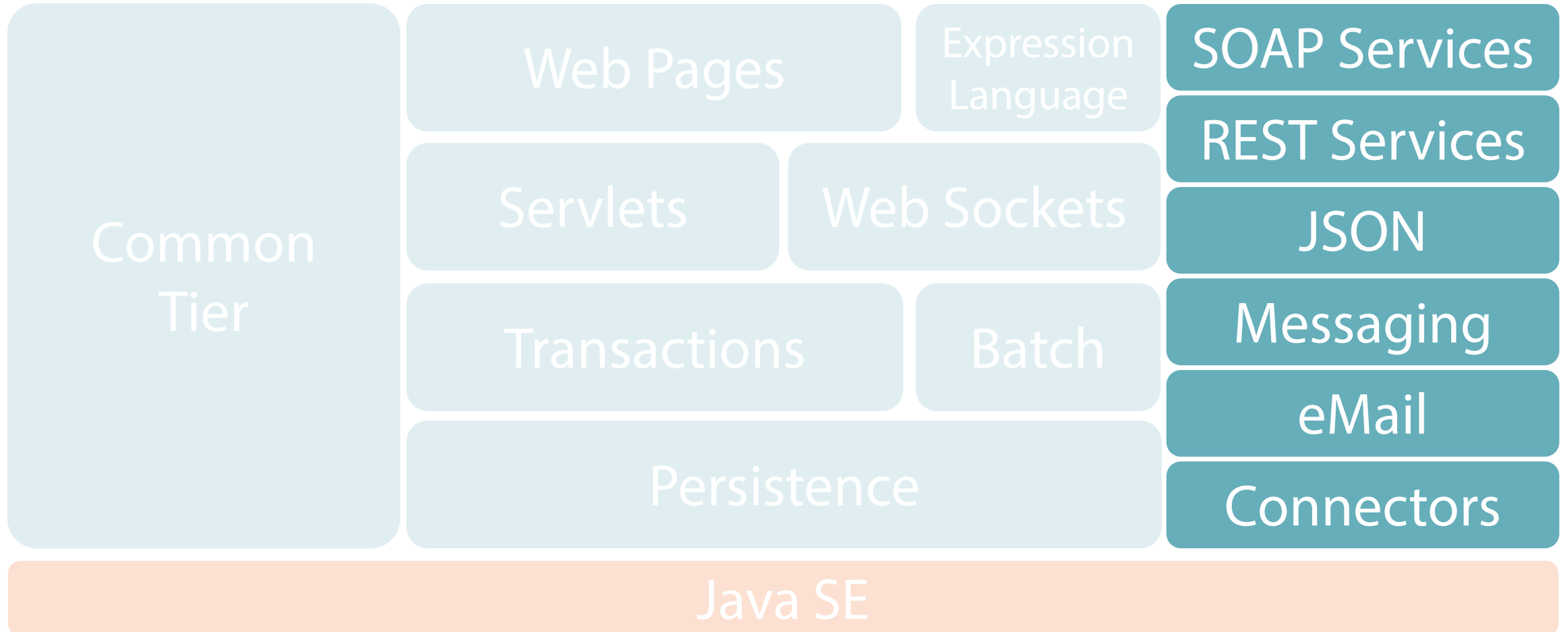
Web Tier



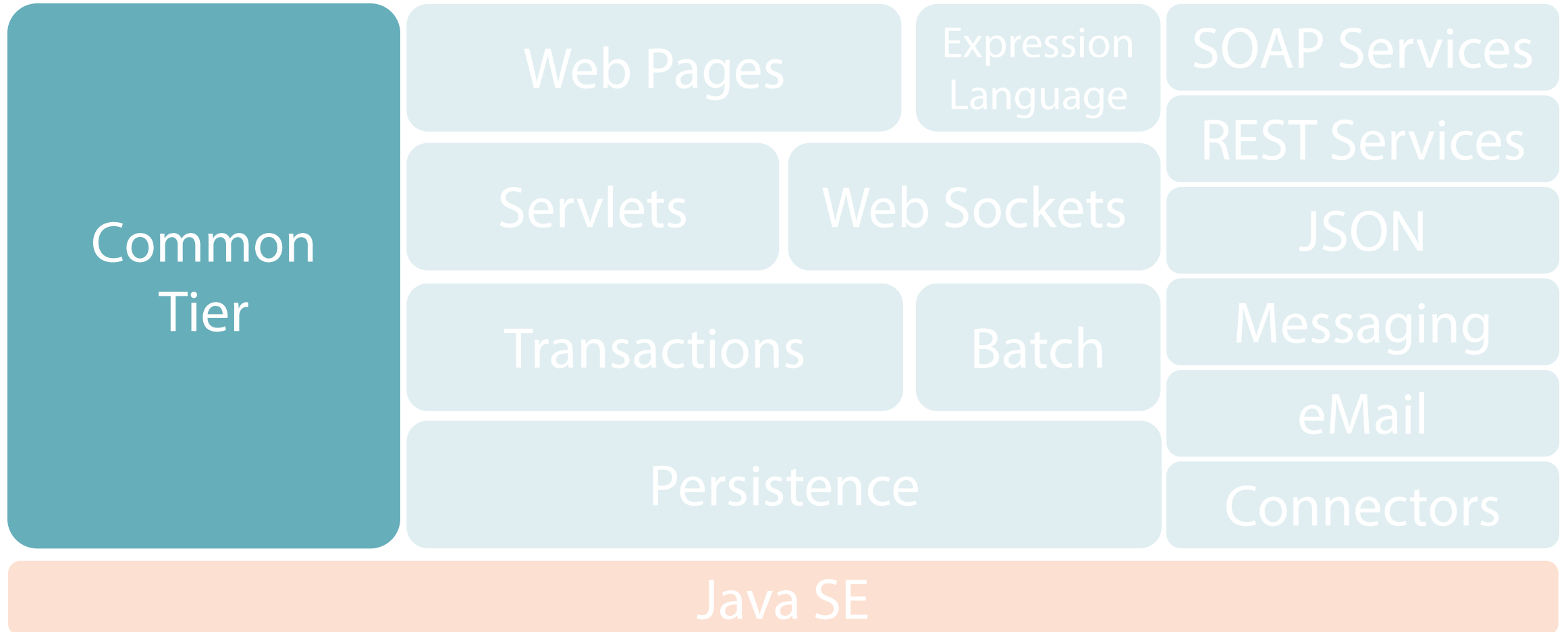
Interoperability Tier



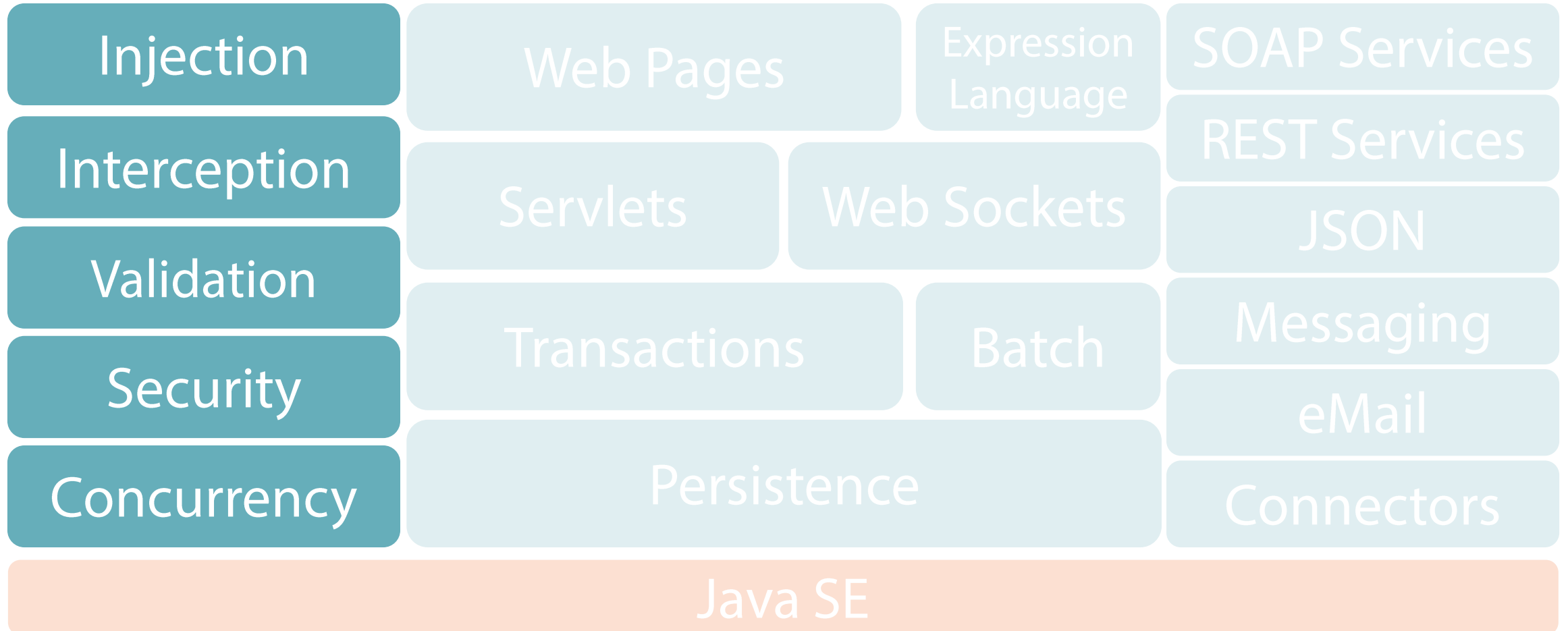
Interoperability Tier



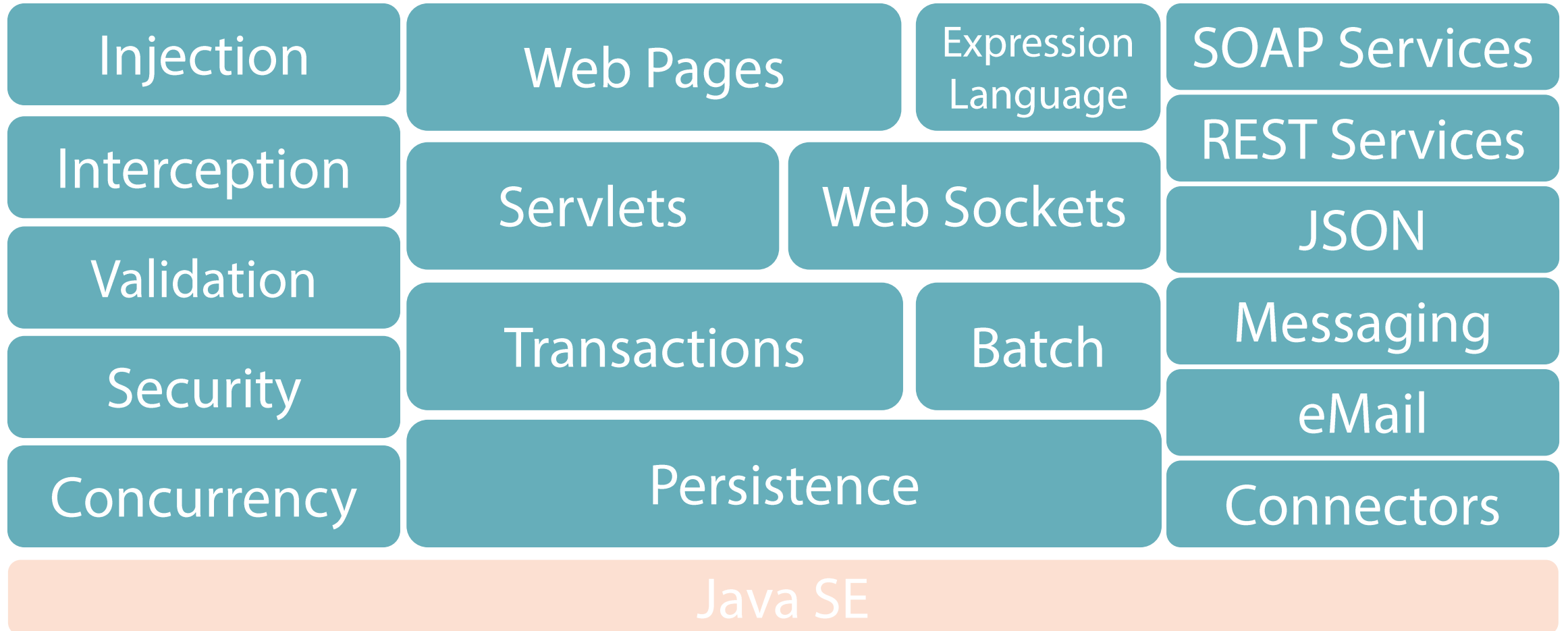
Common Tier



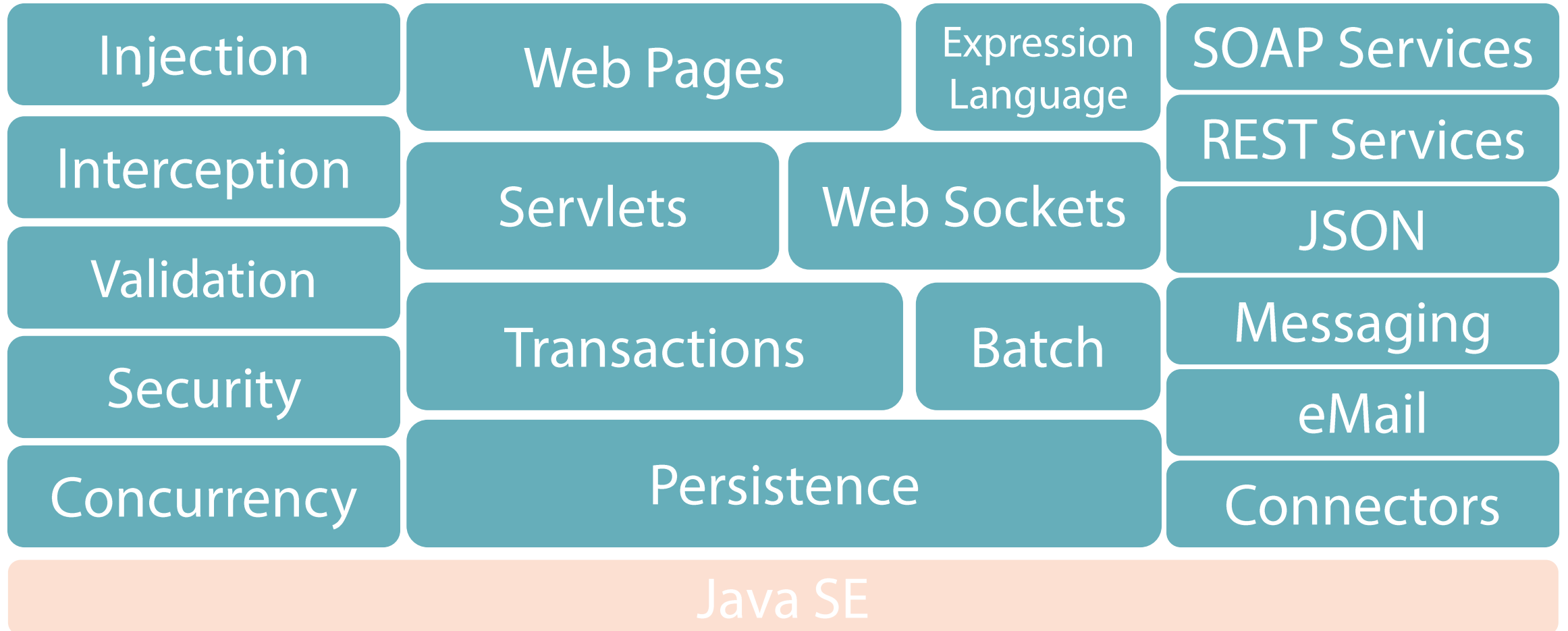
Common Tier



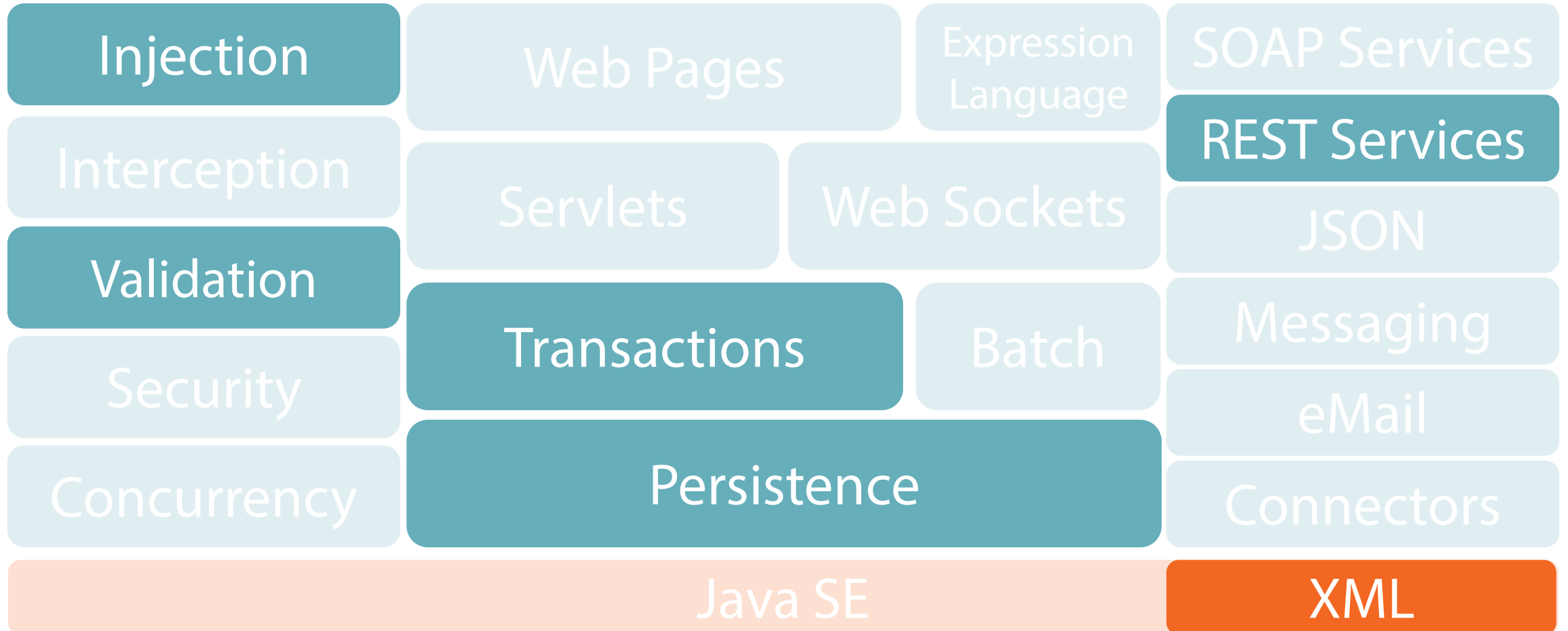
Java EE



Modularity and Flexibility



REST Application



REST Application

```
@Transactional
@Path("users")
public class UserEndpoint {

    @Inject
    private EntityManager em;

    @POST
    @Consumes(MediaType.APPLICATION_XML)
    public void createUserResource(User user) {
        em.persist(user);
    }
}
```

JTA

CDI

JPA

JAX-RS

POST <http://www.cdbookstore.com/users>

```
@XmlRootElement
@Entity
public class User {

    @Id
    private Long id;
    @NotNull
    private String login;
    private String password;

    // Constructors, getters & setters
}
```

JAX-B

JPA

Bean Validation

REST Application

```
@Path("users")
public class UserEndpoint {

    @Inject
    private UserService service;

    @POST
    @Consumes(MediaType.APPLICATION_XML)
    public void createUserResource(User user) {
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@Transactional
public class UserService {

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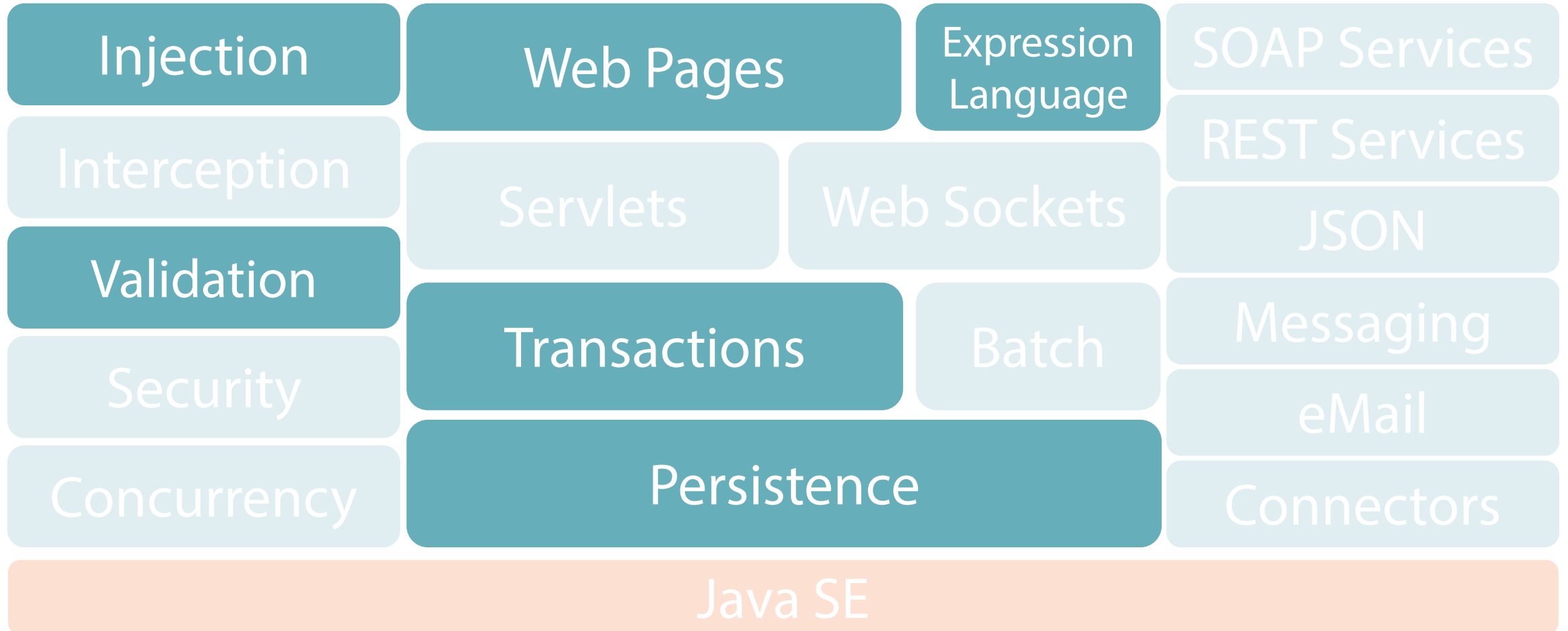
    public User create(@NotNull User user) {
        em.persist(user);
        return user;
    }
}
```

```
@XmlRootElement
@Entity
public class User {

    @Id
    private Long id;
    @NotNull
    private String login;
    private String password;

    // Constructors, getters & setters
}
```

Web Application



Web Application

Login

Password

Sign up

```
<f:view contentType="text/html" encoding="UTF-8"> JSF
  <h:form>
    <h:outputLabel value="Login"/>
    <h:inputText value="#{accountBean.user.login}"/>

    <h:outputLabel value="Password"/>
    <p:password value="#{accountBean.user.password}"/>

    <h:commandButton value="Sign up"
      action="#{accountBean.signup}"/> EL
  </h:form>
</f:view>
```

```
@Named CDI
@SessionScoped
@Transactional JTA
public class AccountBean implements Serializable {

  @Inject
  private EntityManager em;
  @NotNull
  private User user;

  public String signup() {
    em.persist(user);
    return "/main";
  }
}
```

JPA
Bean Validation

Web Application

Login

Password

Sign up

```
<f:view contentType="text/html" encoding="UTF-8">
  <h:form>
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@Named
@SessionScoped
public class AccountBean implements Serializable {

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    @NotNull private User user;

    public String signup() {
        user = service.create(user);
        return "/main";
    }
}
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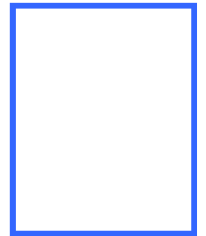
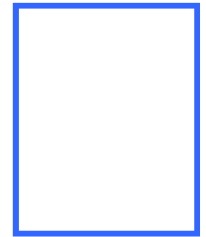
```
@Transactional
public class UserService {

    @Inject private EntityManager em;

    public User create(@NotNull User user) {
        em.persist(user);
        return user;
    }
}
```

Modular and Flexible

- Use the services we need
- Layer the way we want
- Aggregating the right services on the right layer
- Robust technology
- Standard
- Implemented by several vendors
- Portable



Java EE Implementations

- GlassFish
- Weblogic
- JBoss AS
- WildFly
- TomEE
- WebSphere



Apache TomEE



WildFly



Summary



Why Java EE?

What is Java EE?

CDI, Interceptor and Bean Validation

JPA, JTA and Batch

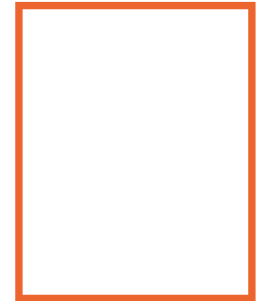
Servlets, JSF and WebSockets

XML, JSON, JAX-RS and Messaging

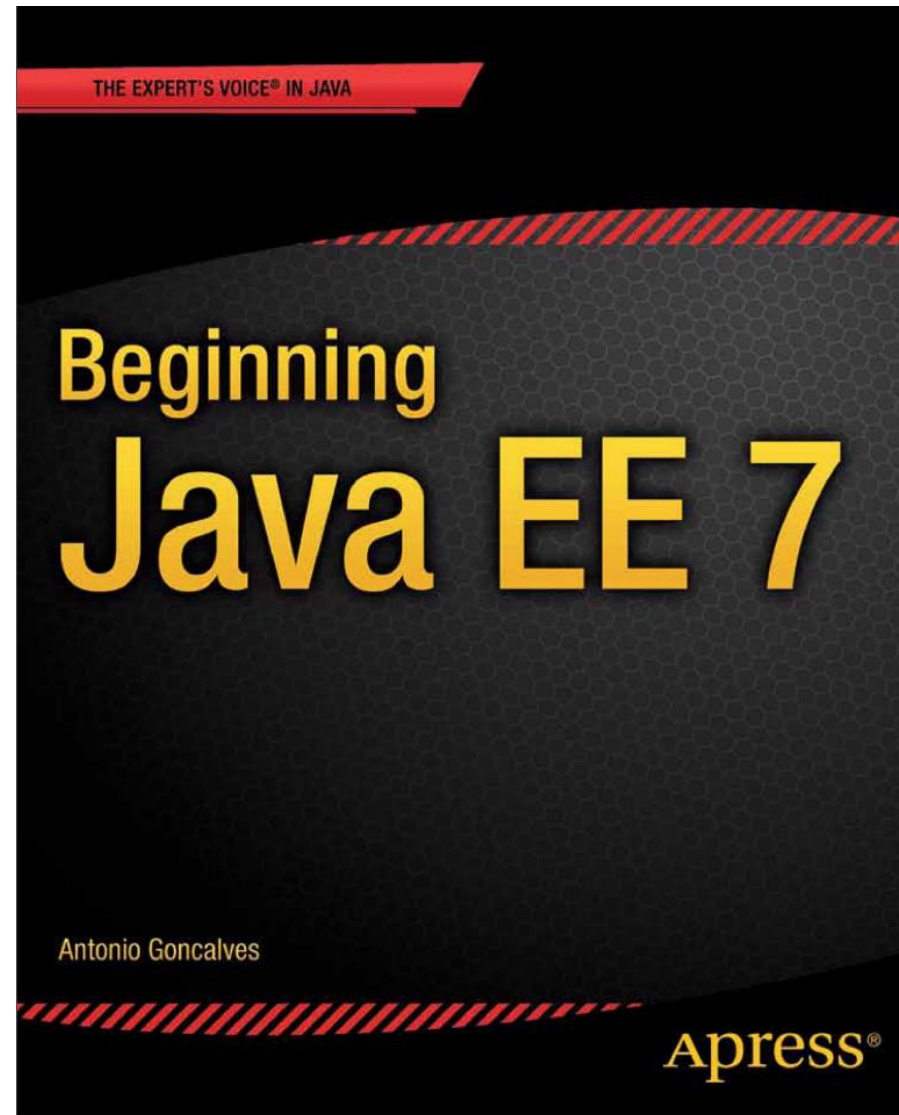
Putting it all together

References

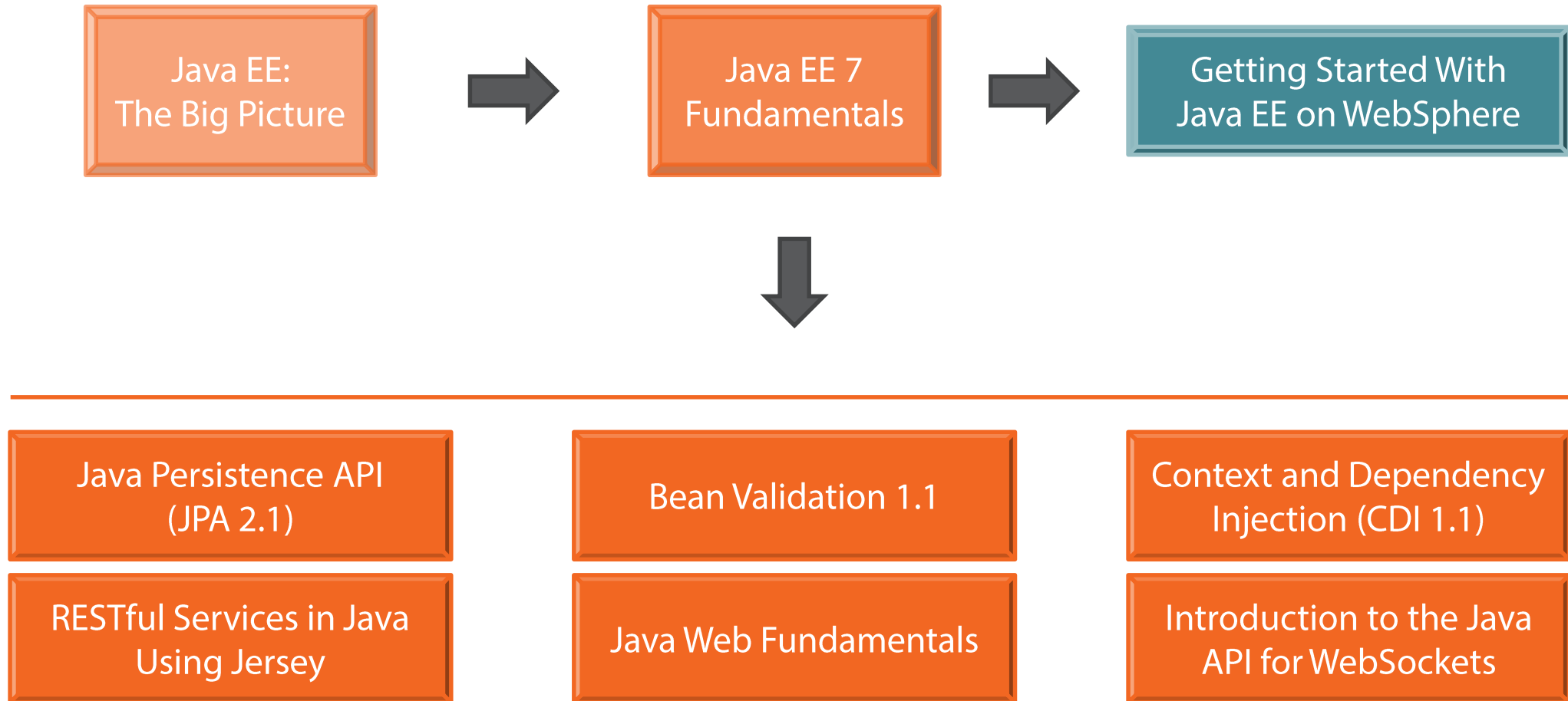
- Articles
- Technical blogs
- Business analysis
- Java EE 7 specification
 - JSR 342
 - <http://jcp.org/en/jsr/detail?id=342>



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Java EE Pluralsight Courses



Java EE 7 Fundamentals



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