

SERVLET

JAVA EE



Servlet Listeners, Events

Presented by



Listeners

During the lifetime of a typical web application, a number of **events** take place, such as:

- requests are created or destroyed.
 - request or session attributes are added, removed, or modified etc.
 - changing state of an object
-

Listeners are the classes which listens to a particular type of events.

And when that event occurs , a functionality triggers.

Each type of listener is bind to a type of event.



Listeners ...

Some important tasks, such as

- counting total and current logged-in users
- creating tables of the database at the time of deploying project
- creating database connection object etc.

** Listeners are Interfaces

** Events are classes



Servlet Listeners API

ServletRequestListener

ServletRequestAttributeListener

ServletContextListener

ServletContextAttributeListener

HttpSessionListener

HttpSessionAttributeListener

HttpSessionBindingListener

HttpSessionActivationListener



Servlet Events API

ServletRequestEvent

ServletContextEvent

ServletRequestAttributeEvent

ServletContextAttributeEvent

HttpSessionEvent

HttpSessionBindingEvent



1. ServletRequestListener

ServletRequestListener listens to ServletRequestEvent which gives a notification, when request is created or destroyed.

Methods : `void requestDestroyed(ServletRequestEvent e)`

`void requestInitialized(ServletRequestEvent e)`

**** Example**



1. ServletRequestListener

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**** Example**



2. ServletRequestAttributeListener

`ServletRequestAttributeListener` listens to `ServletRequestAttributeEvent` which gives a notification when any object is added, removed or replaced from request.

`ServletRequestAttributeListener` is the interface and it defines three methods –

- `attributeAdded(ServletRequestAttributeEvent e)`: It notifies whenever a new attribute is added to the request.
- `attributeRemoved(ServletRequestAttributeEvent e)`: It notifies whenever the attribute is removed from the request.
- `attributeReplaced(ServletRequestAttributeEvent e)`: It notifies whenever the attribute gets replaced on the request.



3. ServletContextListener

ServletContextEvent class gives notifications about changes to the servlet context of a web application.

ServletContextListener receives the notifications about changes to the servlet context and perform some action.

Methods:

Methods	Description
void <code>contextDestroyed(ServletContextEvent e)</code>	is invoked when the application is destroyed.
void <code>contextInitialized(ServletContextEvent e)</code>	is invoked when the application is initialized.



web.xml configuration & methods

web.xml

```
<listener>  
    <listener-class>MyListener</listener-class>  
</listener>
```

Methods:

```
import javax.servlet.*;  
  
public class MyListener implements ServletContextListener  
{  
  
    public void contextInitialized(ServletContextEvent sce) {  
        //code to do some stuff when context is initialized  
    }  
  
    public void contextDestroyed(ServletContextEvent sce) {  
        //code to do some stuff when context is destroyed  
    }  
}
```

ServletContextListener is in javax.servlet package

two important methods

****Example**



web.xml configuration & methods

Problem

You want to initialize a database connection pool before the web application is started.

Don't use helper layer to open the connection (Explicit call to methods).

Use ServletContextListener instead.

It will run your code before the web application is started.

Anytime the application can access database.

****Example**



