

Filters/Interceptors

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It can be used for PreProcessing and PostProcessing of the request before they reach the target resource in the web application.

Areas of Application

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Logging, Security, Altering Request information, Compressing response, encryption of response, authentication etc...

Filters Concepts introduced in Servlet 2.3V

FilterApi contains 3 interfaces

1. Filter(I)
2. FilterConfig(I)
3. FilterChain(I)

To create a filter we need to implement Filter(I)

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```
public interface Filter {  
    public void init(FilterConfig config) throws ServletException;  
    public abstract void doFilter(ServletRequest request, ServletResponse response,  
    FilterChain chain) throws IOException,  
    ServletException;  
    public void destroy();  
}  
refer: FilterApp
```

Behind the Scenes

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1. Whenever we are sending the request to TargetServlet, web container will check if any filter is configured for this servlet or not.
2. If any Filter is configured, web container forwards the request to Filter instead of Servlet.
3. After completing the Filter logic, Filter forwards the request to TargetServlet.
4. After processing the TargetServlet, the response will be forwarded to Filter instead of browser.
5. After executing the Filtering logic, filter forwards the total response to the browser.

eg: http://localhost:9999/Filterapp/test

output

This line is added by DemoFilter before processing the request...

This is Target Servlet...

This line is added by DemoFilter after processing the request...

FilterMapping to particular url-pattern

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```
<filter-mapping>  
    <filter-name>DemoFilter</filter-name>  
    <url-pattern>/test</url-pattern>  
</filter-mapping>
```

FilterMapping to Total WebApplication

=====<filter-mapping>

```
<filter-mapping>  
    <filter-name>DemoFilter</filter-name>
```

```
<url-pattern>*</url-pattern>
</filter-mapping>
```

FilterChaining

Dividing the Request Pre-Processing tasks into multiple filters

Webcontainers rule for ordering the filter in FilterChain

It is depended on the container can't be predicted by the user.

What is the difference b/w Filter doFilter() and FilterChain doFilter()?

Filter==> doFilter()

doFilter(ServletRequest, ServletResponse, FilterChain) throws SE, IOE

Total Filtering logic(pre+post) processing logic.

It is a call back method as it is called by the container automatically.

FilterChain==>doFilter()

doFilter(ServletRequest, ServletResponse) throws IOException,

ServletException;

Forwarding the request to another filter/servlet.

It is not a callback method, because we have to call explicitly.

Wrappers and Listeners

Sometimes we need to alter the request and response object inside filters, to do this we need to use "Wrappers" class.

eg1:

within the filter, we have to convert resume information from wordformat to pdfformat.(upload)

eg2:

within the filter, we have to compress the response and that compressed response we can send to browser so that download time can be reduced.

There are 2 types of Wrappers

- a. Request Wrappers
- b. Response Wrappers

note:

1. No configuration is required for wrappers.
2. Annotation used to represent filter is :@WebFilter(urlPatterns={})

