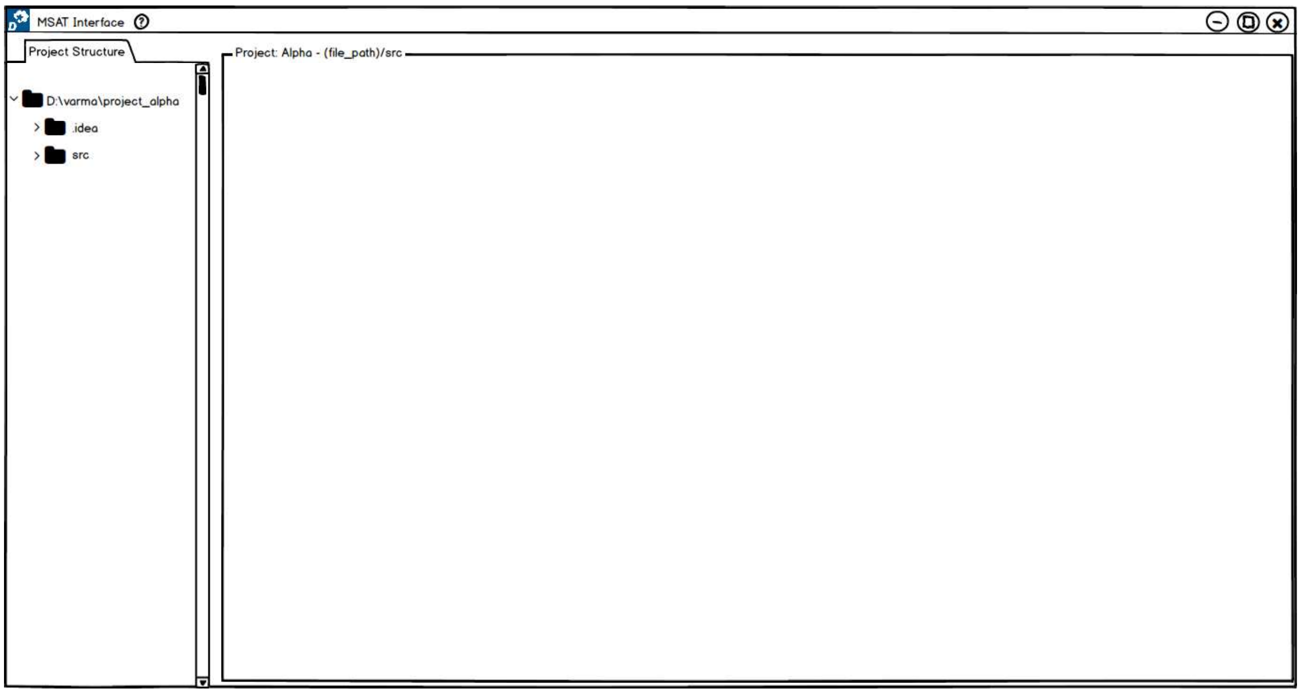
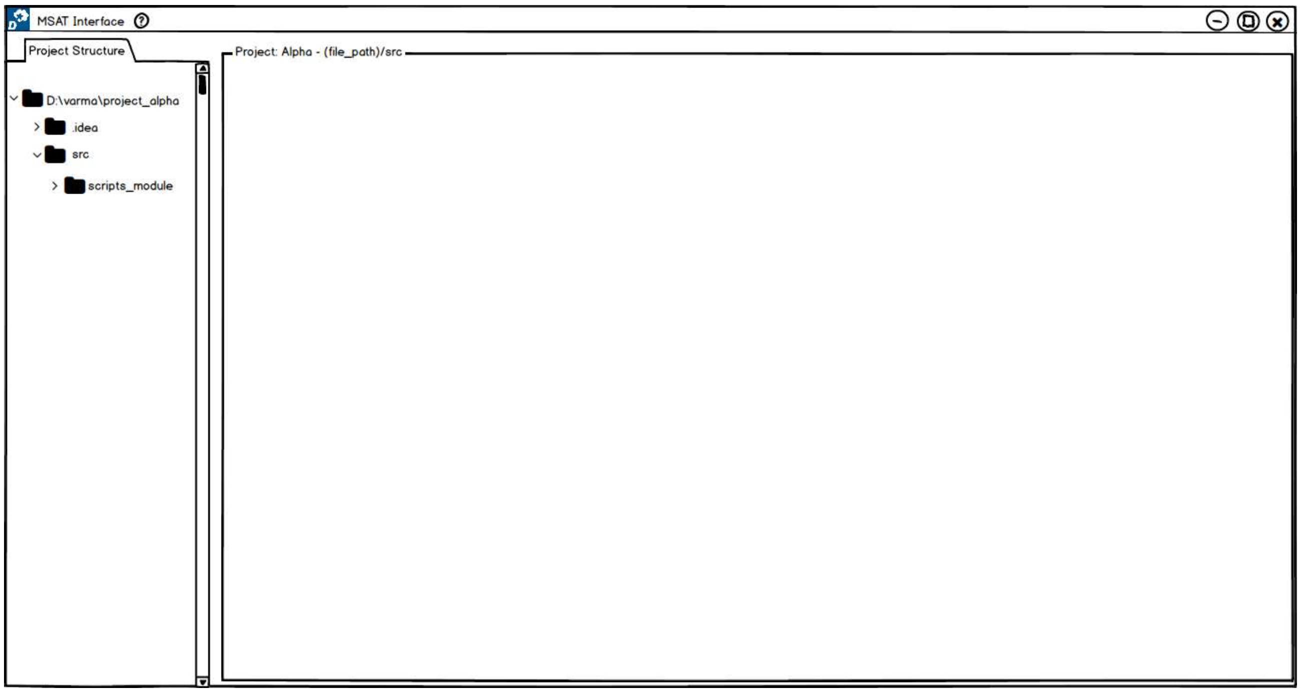
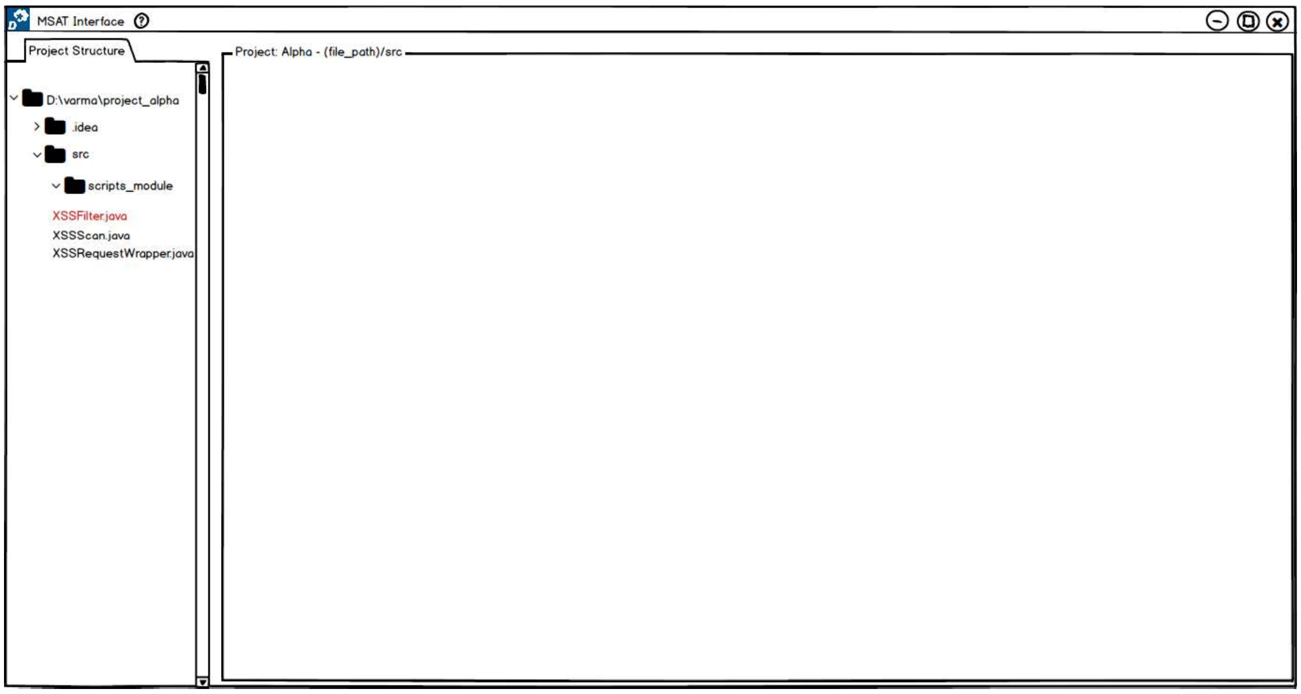
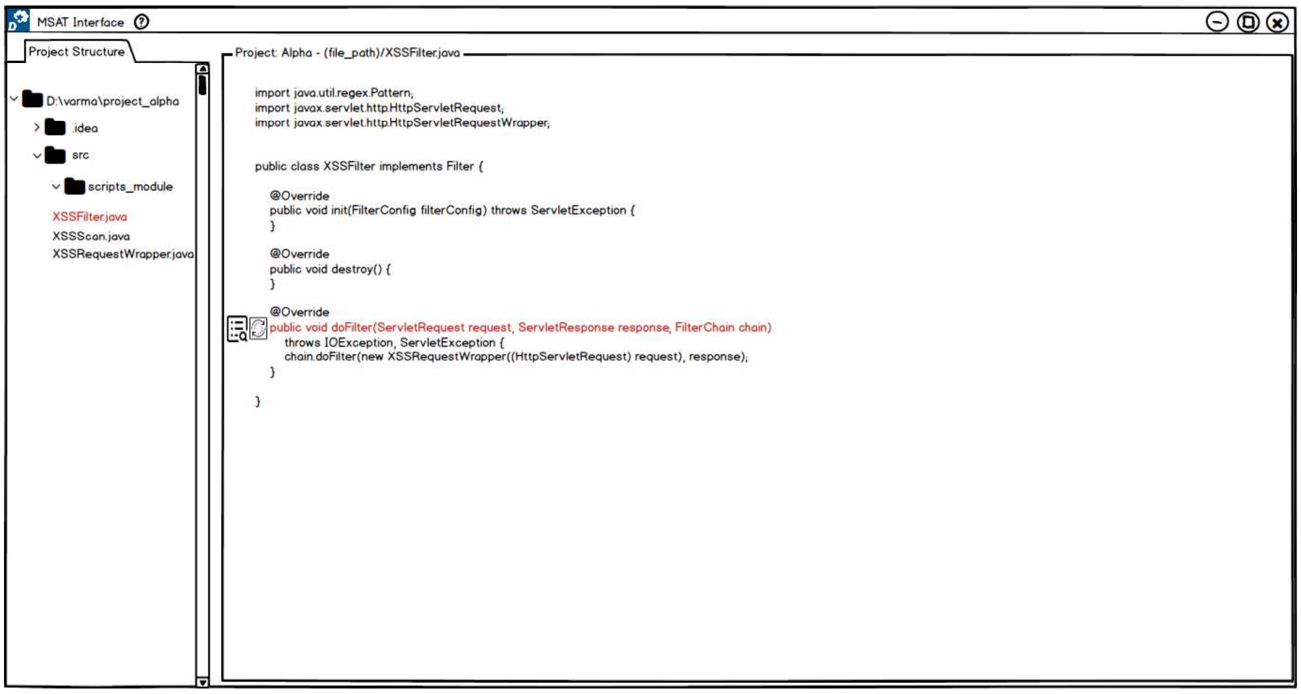
UXD Cycle 2 - RQ 1 - Multiple Icons







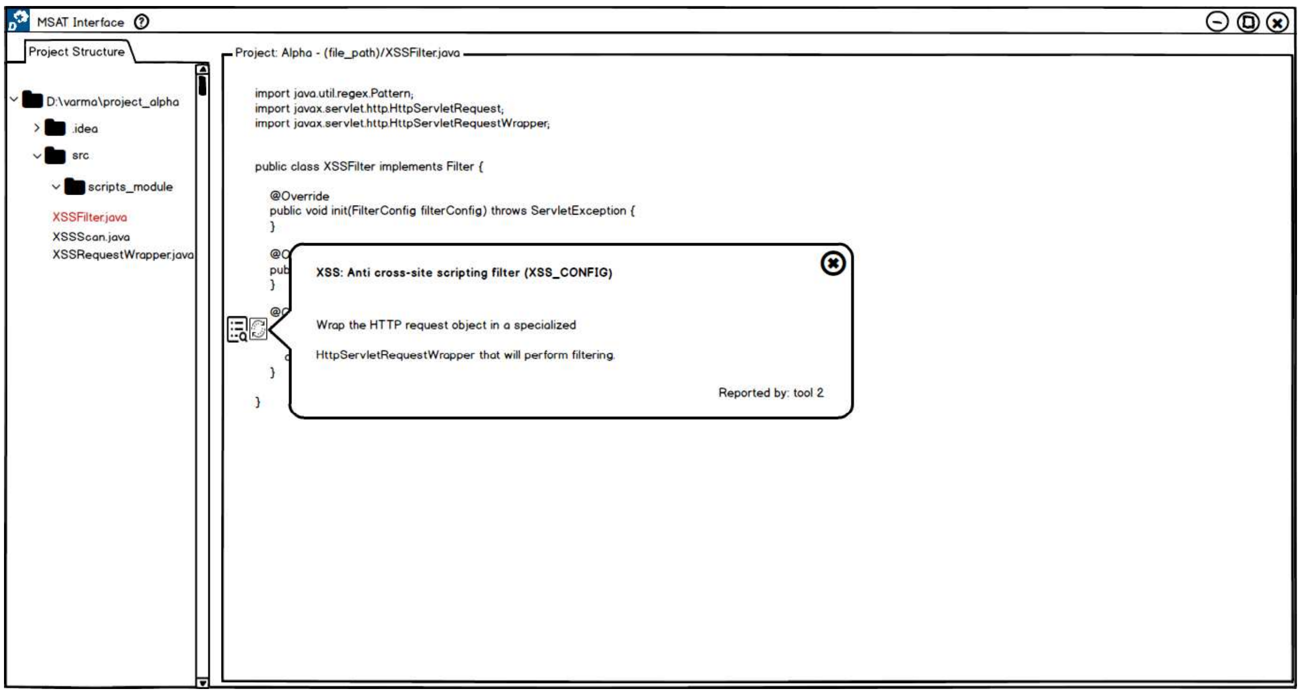

MSAT Interface

Project Structure

D:\varma\project_alpha
.idea
src
scripts_module
XSSFilter.java
XSSScan.java
XSSRequestWrapper.java

Project: Alpha - (file_path)/XSSFilter.java

```
import java.util.regex.Pattern;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletRequestWrapper;


public class XSSFilter implements Filter {

  @Override
  public void init(FilterConfig filterConfig) throws ServletException {
  }

  @Override
  public void destroy() {
  }

  @Override
  public void doFilter(ServletRequest request, ServletResponse response, FilterChain chain)
     throws IOException, ServletException {
     chain.doFilter(new XSSRequestWrapper((HttpServletRequest) request), response);
  }

}
```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import java.util.regex.Pattern;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletRequestWrapper;


public class XSSFilter implements Filter {

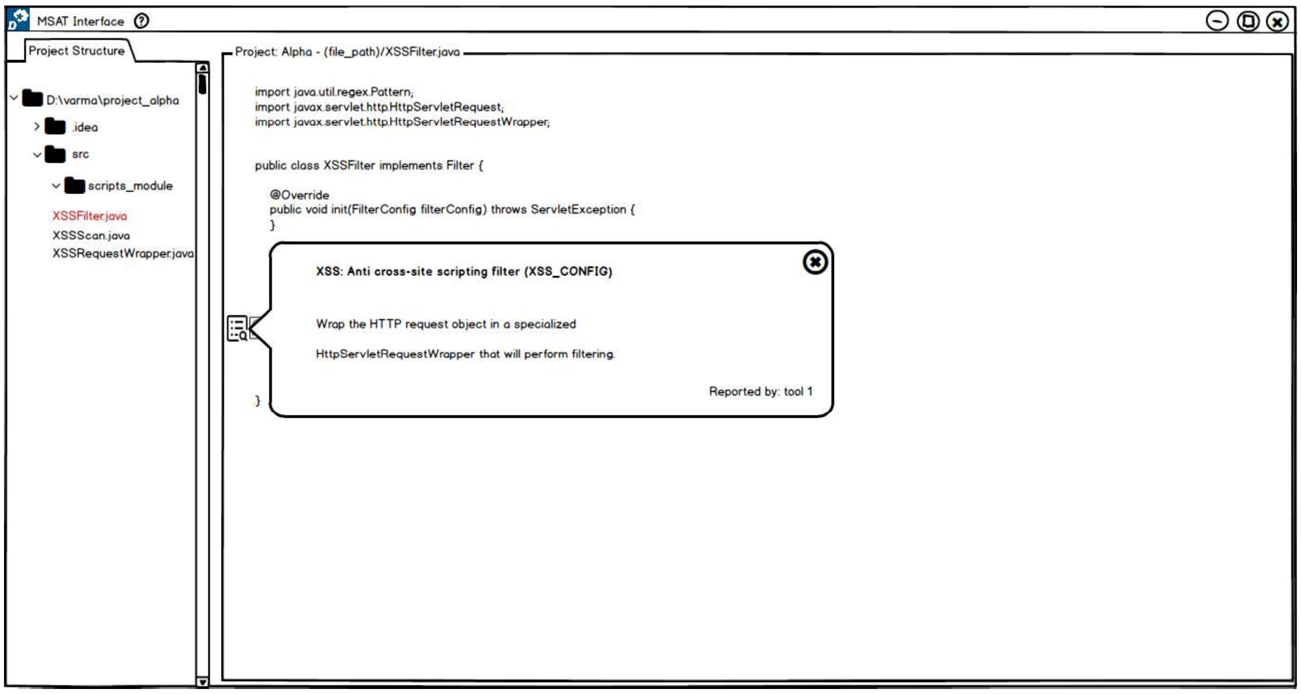
  @Override
  public void init(FilterConfig filterConfig) throws ServletException {
  }
```

XSS: Anti cross-site scripting filter (XSS_CONFIG)

Wrap the HTTP request object in a specialized

HttpServletRequestWrapper that will perform filtering.

Reported by: tool 2


MSAT Interface

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Project: Alpha - (file_path)/XSSFilter.java

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import java.util.regex.Pattern;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletRequestWrapper;


public class XSSFilter implements Filter {

  @Override
  public void init(FilterConfig filterConfig) throws ServletException {
  }
```
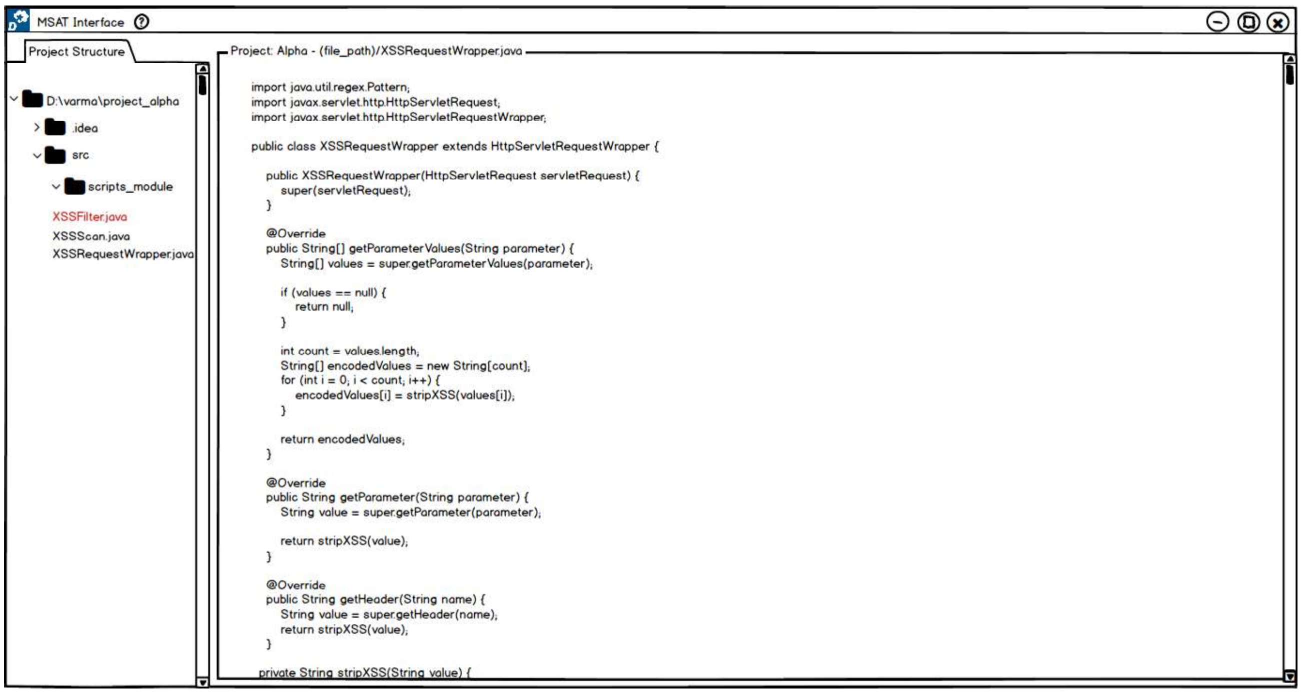

XSS: Anti cross-site scripting filter (XSS_CONFIG)

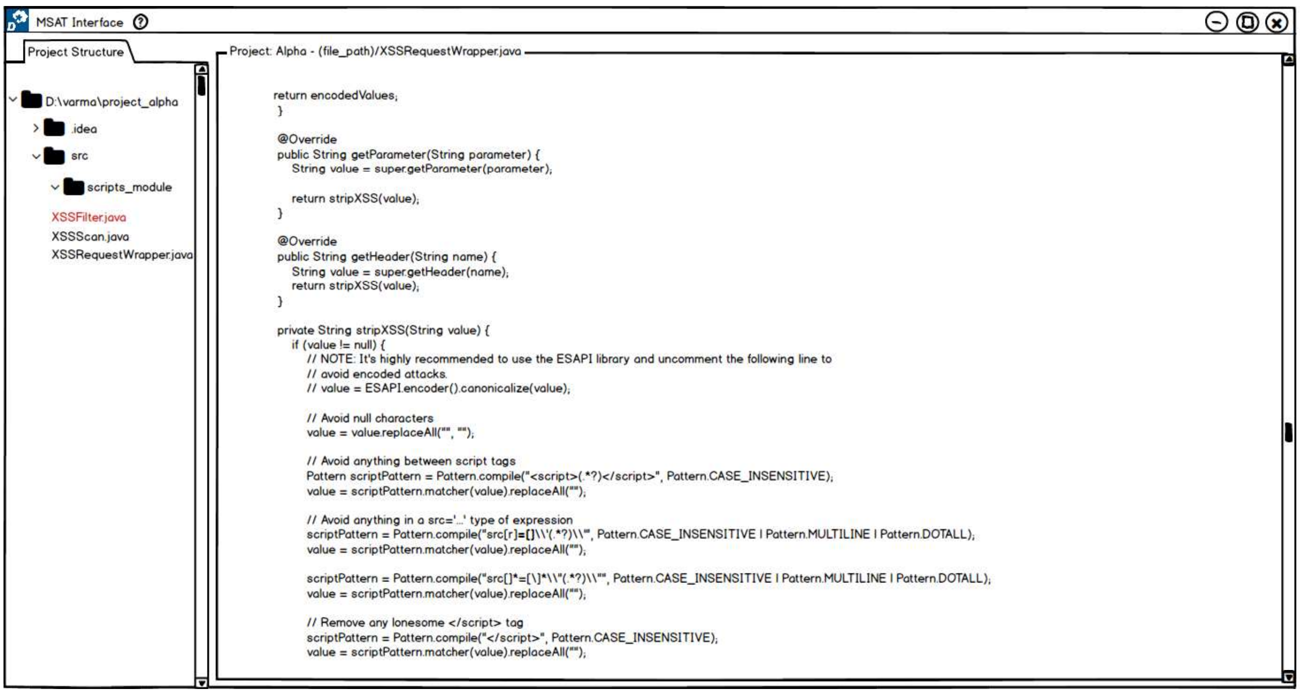
Wrap the HTTP request object in a specialized

HttpServletRequestWrapper that will perform filtering.

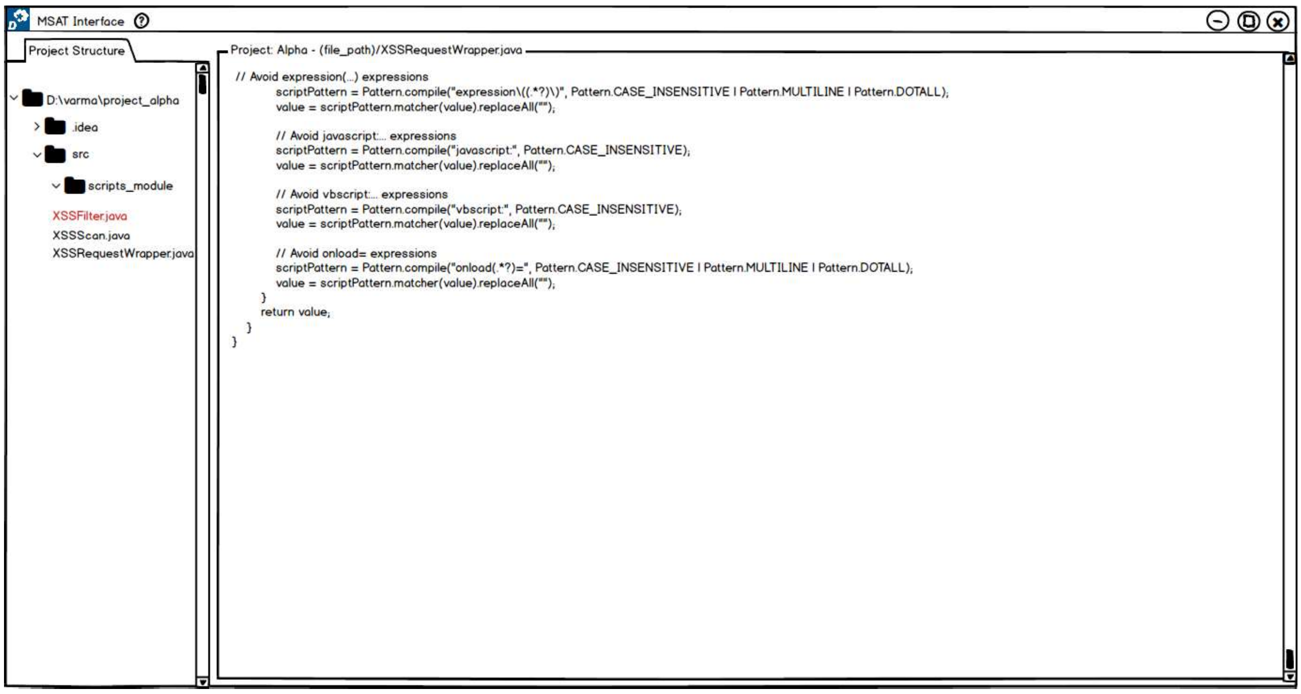
Reported by: tool 1



```java
import java.util.regex.Pattern;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletRequestWrapper;

public class XSSRequestWrapper extends HttpServletRequestWrapper {

   public XSSRequestWrapper(HttpServletRequest servletRequest) {
      super(servletRequest);
   }

   @Override
   public String[] getParameterValues(String parameter) {
      String[] values = super.getParameterValues(parameter);

      if (values == null) {
         return null;
      }

      int count = values.length;
      String[] encodedValues = new String[count];
      for (int i = 0; i < count; i++) {
         encodedValues[i] = stripXSS(values[i]);
      }

      return encodedValues;
   }

   @Override
   public String getParameter(String parameter) {
      String value = super.getParameter(parameter);

      return stripXSS(value);
   }

   @Override
   public String getHeader(String name) {
      String value = super.getHeader(name);
      return stripXSS(value);
   }

   private String stripXSS(String value) {
```



```java
      return encodedValues;
   }

   @Override
   public String getParameter(String parameter) {
      String value = super.getParameter(parameter);

      return stripXSS(value);
   }

   @Override
   public String getHeader(String name) {
      String value = super.getHeader(name);
      return stripXSS(value);
   }

   private String stripXSS(String value) {
      if (value != null) {
         // NOTE: It's highly recommended to use the ESAPI library and uncomment the following line to
         // avoid encoded attacks.
         // value = ESAPI.encoder().canonicalize(value);

         // Avoid null characters
         value = value.replaceAll("", "");

         // Avoid anything between script tags
         Pattern scriptPattern = Pattern.compile("<script>(.*?)</script>", Pattern.CASE_INSENSITIVE);
         value = scriptPattern.matcher(value).replaceAll("");

         // Avoid anything in a src='...' type of expression
         scriptPattern = Pattern.compile("src[r]=[]\\'(.*?)\\'", Pattern.CASE_INSENSITIVE | Pattern.MULTILINE | Pattern.DOTALL);
         value = scriptPattern.matcher(value).replaceAll("");

         scriptPattern = Pattern.compile("src[]*=[\]*\\"(.*?)\\"", Pattern.CASE_INSENSITIVE | Pattern.MULTILINE | Pattern.DOTALL);
         value = scriptPattern.matcher(value).replaceAll("");

         // Remove any lonesome </script> tag
         scriptPattern = Pattern.compile("</script>", Pattern.CASE_INSENSITIVE);
         value = scriptPattern.matcher(value).replaceAll("");
```



```java
 // Avoid expression(...) expressions
         scriptPattern = Pattern.compile("expression\\((.*?)\\)", Pattern.CASE_INSENSITIVE | Pattern.MULTILINE | Pattern.DOTALL);
         value = scriptPattern.matcher(value).replaceAll("");

         // Avoid javascript:... expressions
         scriptPattern = Pattern.compile("javascript:", Pattern.CASE_INSENSITIVE);
         value = scriptPattern.matcher(value).replaceAll("");

         // Avoid vbscript:... expressions
         scriptPattern = Pattern.compile("vbscript:", Pattern.CASE_INSENSITIVE);
         value = scriptPattern.matcher(value).replaceAll("");

         // Avoid onload= expressions
         scriptPattern = Pattern.compile("onload(.*?)=", Pattern.CASE_INSENSITIVE | Pattern.MULTILINE | Pattern.DOTALL);
         value = scriptPattern.matcher(value).replaceAll("");
      }
      return value;
   }
}
```