Assignment No. 6

TITLE:Design, develop and deploy application using struts.

1 Problem Statement

Design, develop and deploy application containing addition of numbers using Struts

2 Learning Objectives

In this assignment, students will :

1. To understand MVC framework using Struts2

2. To explore the usage of Struts2 framework

3 Learning Outcomes

After completion of this assignment, students will be able to :

1. Use Struts2 framework

2. Develop application for addition of two numbers using Struts2

4 Requirements

Hardware : 64-bit 2.8 GHz processor, 4 GB RAM

Software : 64-bit Fedora 20 OS,IDE: Netbeans 8.1, Web Browser

5   Theory

The struts 2 framework is used to develop MVC-based web application.The struts framework was initially created by Craig McClanahan and donated to Apache Foundation in May, 2000 and Struts 1.0 was released in June 2001.The current stable release of Struts is Struts 2.3.16.1 in March 2, 2014.This struts 2 tutorial covers all the topics of Struts 2 Framework with simplified examples for beginners and experienced persons.The Struts 2 framework is used to develop MVC (Model View Controller) based web applications. Struts 2 is the combination of webwork framework of opensymphony and struts 1.

struts2 = webwork + struts1

Struts 2 Features:
Struts 2 provides many features that were not in struts 1. The important features of struts 2 framework are as follows:

1. Configurable MVC components:
In struts 2 framework, we provide all the components (view components and action) information in struts.xml file. If we need to change any information, we can simply change it in the xml file.

2. POJO based actions:
In struts 2 framework, we provide all the components (view components and action) information in struts.xml file. If we need to change any information, we can simply change it in the xml file.

3. AJAX supports:
Struts 2 provides support to ajax technology. It is used to make asynchronous request i.e. it doesn't block the user. It sends only required field data to the server side not all. So it makes the performance fast.

4. Integration support:
We can simply integrate the struts 2 application with hibernate, spring, tiles etc. frameworks.

5. Various result types:
We can use JSP, freemarker, velocity etc. technologies as the result in struts 2.

6. Various tag support:
Struts 2 provides various types of tags such as UI tags, Data tags, control tags etc to ease the development of struts 2 application.

Struts 2 Architecture and Flow:
The architecture and flow of struts 2 application, is combined with many components such as Controller, ActionProxy, ActionMapper, Configuration Manager, ActionInvocation, Inerceptor, Action, Result etc.

Here, we are going to understand the struts flow by basic flow:

Struts 2 basic flow:
Let's try to understand the basic flow of struts 2 application by this simple figure 1:

Figure
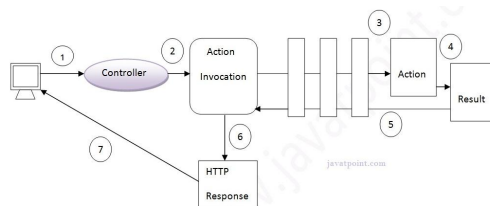

Figure 1: Strut2 basic flow

Basic Flow:
1.User sends a request for the action
2.Controller invokes the ActionInvocation
3.ActionInvocation invokes each interceptors and action
4.A result is generated
5.The result is sent back to the ActionInvocation
6.A HttpServletResponse is generated
7.Response is sent to the user

6 Output

Output 1
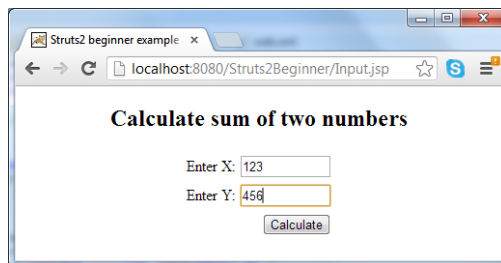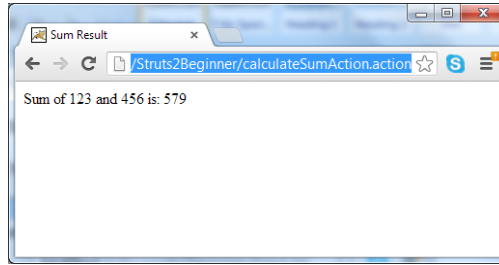

Figure 2: Output

7 Output

Output 2

Figure 3: Output

8   Conclusion

Hence, we have learnt and successfully executed Struts2 application to add two numbers from this assignment.