IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 1, December 2025
Impact Factor: 7.67

Implementation of Java Frameworks for Web Applications

Prof. S. D. Bhondave, Akash Appa Kharde, Saurav Rambhau Nemane, Sushant Dattatray Nagargoje, Revan Suryabhan Girawale
Adsul Technical Campus Chas, Ahilyanagar

Abstract: *This paper represents web design frameworks as a conceptual methodology to expand reusability in Web applications. It highlights the importance of constructing abstract and reusable design structures using various Web Information Systems. It focuses on Hibernate framework technology and its efficient handling of large databases, implementation of persistent features in object-oriented systems, and its relation with design patterns and frameworks. Java uses MVC N-tier architecture along with EJB, Struts, and Hibernate.*

Keywords: Framework, Hibernate, J2EE, Spring, Web Design

I. INTRODUCTION

A study of Java language using abstract frameworks has grown widely. A major part of application development involves building and managing persistence layers that interact with databases. Hibernate fills this gap by providing an easy and powerful ORM framework. Design patterns define reusable solutions for common development problems. Tools for analyzing Java programs include dynamic analysis, static analysis, and model checking. Spring Framework provides a strong programming and configuration model for enterprise applications.

II. SPRING FRAMEWORK ARCHITECTURE

Spring helps create robust Java enterprise apps. It supports Groovy and Kotlin and allows multiple architectural patterns. Spring consists of around 20 modules. The core container includes Core, Beans, Context, and Expression Language modules. BeanFactory provides factory pattern implementation where beans are created per developer instructions. AOP enables using method interceptors and point-cuts for separation of concerns. Spring manages transactions and integrates with ORM tools like iBATIS, Hibernate, Oracle TopLink, and JPA.

III. STRUTS FRAMEWORK ARCHITECTURE

Struts extends Java Servlet API and uses MVC architecture. The Model holds JavaBeans/EJB, View holds JSP, and Controller holds Action classes. Struts uses struts-config.xml for configuration. ActionServlet processes requests, loads mappings, gathers request data into JavaBeans, validates input, calls model components, and forwards results.

IV. JSP ARCHITECTURE

JSP is part of a 3-tier architecture functioning as the View in MVC. A JSP container works with a web server to provide runtime support. Upon a browser request, the server forwards the .jsp request to the JSP engine, which converts it into a servlet. The servlet executes and generates HTML output which is returned to the browser.

V. CHAT APP USING PUSHER & STRUTS2

Realtime chat improves communication and customer experience. Pusher is a hosted service for realtime features in web/mobile apps. Requirements include Java SDK, Eclipse, jQuery, Maven, and Java frameworks. Implementing a group chat involves setting up Pusher channels, configuring a Maven project, adding Struts2 and Pusher libraries, building UI using CSS/jQuery, and linking Struts Action classes.

Copyright to IJARSCT
www.ijarsct.co.in
DOI: 10.48175/IJARSCT-30106

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 1, December 2025
Impact Factor: 7.67

VI. INTEGRATING AIML CHATBOT WITH CHATAPP

AIML is an XML dialect used to create natural language agents. It contains NLU rules. AIML files can include queries, personalities, places, etc. AIML can be integrated into Java frameworks. The author integrated a modified A.L.I.C.E. bot into a chat application.

VII. CONCLUSION

This review paper presents an abstract interpretation framework for Java language. Spring and Struts help in development, debugging, and testing. Pusher provides realtime communication. These frameworks can work together to create enterprise web applications and chatrooms integrated with chatbots.

REFERENCES

[1] Thrash Mane, K.C. (2013). The Spring Framework: AN OPEN SOURCE JAVA PLATFORM FOR DEVELOPING ROBUST JAVA APPLICATIONS. IJITEE.
[2] Dimitris K. Iakovidis (2014). OPEN-ACCESS FRAMEWORK FOR OBJECT-ORIENTED VIDEO ANALYSIS SOFTWARE.
[3] https://www.pusher.com/
[4] https://chatbotslife.com/rule-based-standalone-aiml-chatbots
[5] LI Gang. Lightweight Java EE enterprise development using Struts 2, Spring, Hibernate.
[6] Yang Shabo. J2EE project training – Hibernate technology.
[7] Liu Bin. Java Web integration and development: JSP, AJAX, Struts, Hibernate.