Java JDBC Introduction - Java Database Connectivity, Steps to Connect Database with Ja...

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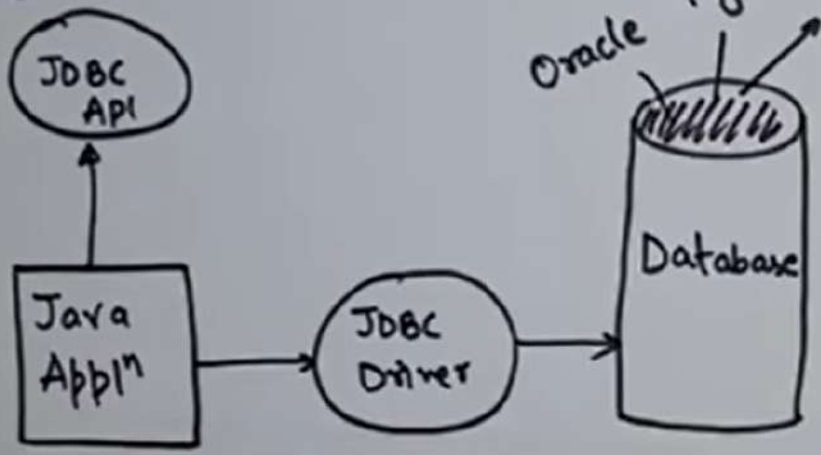
For Engineering Students of GGSIPU, UPTU and Other Universities, Colleges of India

- Java JDBC is a Java API to Connect and execute query with the database.



Steps to Connect to database in Java

1.) Register Driver class

forName() m d

Class dbc.driver.

Driver");

2.) Create Connection Object

Connection Con = DriverManager.getConnection(

"path", "username", "password");

MySql. [Emp / root]

3.) Create Statement Object

↳ Execute Queries with db.

Statement stmt = Con.createStatement();

4.) Execute the Query

ResultSet rs = Stmt.executeQuery("select * from Emp");

while(rs.next())

rs.getInt(), rs.getString();

9:53 / 11:37

(JDBC-2)

5) Close the Connection Object

Con.close()

How

base

drivers don't support all transaction isolation levels.

Struts framework

Apache Struts is a free open-source framework for creating Java web applications. Web applications differ from conventional websites in that web applications can create a dynamic response. Many websites deliver only static pages. A web application can interact with databases and business logic engines to customize a response. Web applications based on JavaServer Pages sometimes commingle database code, page design code, and control flow code. In practice, we find that unless these concerns are separated, larger applications become difficult to maintain.

One way to separate concerns in a software application is to use a Model-View-Controller (MVC) architecture. The *Model* represents the business or database code, the *View* represents the page design code, and the *Controller* represents the navigational code. The Struts framework is designed to help developers create web applications that utilize a MVC architecture.

The framework provides three key components:

- A "request" handler provided by the application developer that is mapped to a standard URI.

- A "response" handler that transfers control to another resource which completes the response.
- A tag library that helps developers create interactive form-based applications with server pages.

The framework's architecture and tags are buzzword compliant. Struts works well with conventional REST applications and with nouveau technologies like SOAP and AJAX.

Configuring for Struts

1. Download the Struts binary release from http://jakarta.apache.org.
2. Extract the zip file.
3. Copy the .jar files to lib directory of the Web application.
4. Copy the .tld files to WEB-INF directory.
5. Store web.xml and struts-config.xml files in WEB-INF directory. (struts-config.xml is the DD for all Struts applications. It links all MVC components).

15.JNTU Syllabus with additional topics :

1. **Session tracking using Hidden form fields.**
2. **Struts framework**

Java APIs, including the JDBC API to access enterprise databases. In short, to use a Bean in a JSP page you should:

- Create a Java Bean. The Java Bean is a specially constructed Java class that provides a default, no-argument constructor, implements the Serializable interface and it has getter and setter methods for its properties.
- Create a jsp page, using the `<%code fragment%>` scriptlet. It can contain any number of JAVA language statements, variable or method declarations, or expressions that are valid in the page scripting language.
- Use the `useBean` action to declare the JavaBean for use in the JSP page. Once declared, the bean becomes a scripting variable that can be accessed by both scripting elements and other custom tags used in the JSP.
- Use the `getProperty` action to access get methods and `setProperty` action to access set methods of the bean.

Let's take a look at the code snippets of a sample Bean and a JSP page that uses it, below:

```
<%@ page language="java" contentType="text/html;charset=UTF-8" %>
<%@ page import="com.javacodegeeks.snippets.enterprise.SampleBean"%>

<html>

<head>
    <title>Java Code Geeks Snippets - Use a Bean in JSP Page</title>
</head>

<body>

    <jsp:useBean id="sampleBean" class="com.javacodegeeks.snippets.enterprise.SampleBean" scope=
        <%-- intialize bean properties --%>
        <jsp:setProperty name="sampleBean" property="param1" value="value1" />
    </jsp:useBean>

    Sample Bean: <%= sampleBean %>

    param1: <jsp:getProperty name="sampleBean" property="param1" />
    param2: <jsp:getProperty name="sampleBean" property="param2" />

</body>
```

URL:

```java
package com.javacodegeeks.snippets.enterprise;

import java.util.Date;

public class SampleBean {

    private String param1;
    private Date param2 = new Date();

    public String getParam1() {
        return param1;
    }
    public void setParam1(String param1) {
        this.param1 = param1;
    }

    public Date getParam2() {
        return param2;
    }
    public void setParam2(Date param2) {
        this.param2 = param2;
    }

    @Override
    public String toString() {
        return "SampleBean [param1=" + param1 + ", param2=" + param2 + "]";
    }

```

L60: Web 3.0 Introduction | Semantic Web Technologies/Concepts | Challenges/Issues | ...

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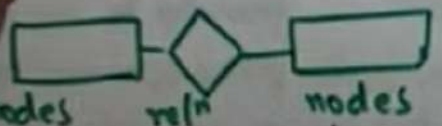
Web 3.0: It is Semantic Web. It is extension of Current web (2.0) in which info" is given well defined meaning, better enabling Computers and people to work in cooperation.

Semantic web Technologies/concepts:

i) **XML:** used for self-description of data. Also used for data-exchange.

ii) **RDF:** Prvides foundation for publishing and king data. Used to express data/objects and r relationships (data models).



i) Subject: Resource
ii) Predicate: Property
iii) Object: Value

iii) **SPAROL:** Query language and data access protocol for semantic web data sources.

iv) **Ontology (OWL):** Sharable Conceptualization of Specific domain of interest in machine understandable format.

Challenges/Issues:

i) Vastness → Huge no. of class names, duplicacy.

ii) Vagueness → user Quertes (Fuzzy Logic)

iii) Uncertainity → Patient (High temp.) ← Fever, Dengue, Malaria.

iv) Inconsistency — Delhi 01 <college>, Mumbai 02 <Institute>, → 0

v) Deceit → Producer is misleading. (IMP)

Comparison of web 2.0 and web 3.0

web 2.0	web 3.0
i) Today's web	Intelligent (Future) web
ii) Keyword based	Semantics (meaning)
iii) Human-Readable	Both Human and machine do things
iv) Place to find things	
v) No Intelligence	
vi) Inefficient	