import java.io.\*; importjavax.servlet.\*;

importjavax.servlet.http.\*; import java.sql.\*;

publicclassBookServletextendsHttpServlet{ private Connection conn;

publicvoidinit()throwsServletException{ try {

Class.forName("com.mysql.cj.jdbc.Driver");

conn=DriverManager.getConnection("jdbc:mysql://localhost:3306/bookstore","root", "password");

}catch(Exceptione){

thrownewServletException("DBConnectionError",e);

}

}

protectedvoiddoGet(HttpServletRequestrequest,HttpServletResponseresponse)throws ServletException, IOException {

Stringaction=request.getParameter("action"); if (action == null) action = "list";

try{

switch(action){ case "create":

createBook(request,response); break;

case "read": readBooks(response); break;

case "update": updateBook(request,response); break;

case "delete": deleteBook(request,response); break;

default:

readBooks(response); break;

}

}catch(SQLExceptione){

thrownewServletException("SQLerror", e);

}

}

privatevoidcreateBook(HttpServletRequestrequest,HttpServletResponseresponse)throws SQLException, IOException {

String title = request.getParameter("title"); Stringauthor=request.getParameter("author");

doubleprice=Double.parseDouble(request.getParameter("price"));

PreparedStatementps=conn.prepareStatement("INSERTINTObooks(title,author,price) VALUES (?, ?, ?)");

ps.setString(1, title); ps.setString(2,author); ps.setDouble(3,price); ps.executeUpdate();

response.getWriter().println("Bookcreatedsuccessfully.");

}

privatevoidreadBooks(HttpServletResponseresponse)throwsSQLException,IOException{ Statement stmt = conn.createStatement();

ResultSetrs=stmt.executeQuery("SELECT\*FROM books");

PrintWriter out = response.getWriter(); out.println("<html><body><h2>BookList</h2>"); while (rs.next()) {

out.println("ID: "+rs.getInt("id")+",Title:"+rs.getString("title") +

",Author:"+rs.getString("author")+",Price:$"+rs.getDouble("price") +

"<br>");

}

out.println("</body></html>");

}

privatevoidupdateBook(HttpServletRequestrequest,HttpServletResponseresponse)throws SQLException, IOException {

intid=Integer.parseInt(request.getParameter("id")); String title = request.getParameter("title");

Stringauthor = request.getParameter("author");

doubleprice=Double.parseDouble(request.getParameter("price"));

PreparedStatementps=conn.prepareStatement("UPDATEbooksSETtitle=?,author=?, price=? WHERE id=?");

ps.setString(1, title); ps.setString(2,author); ps.setDouble(3,price); ps.setInt(4, id);

introws = ps.executeUpdate();

response.getWriter().println(rows>0?"Bookupdated.": "Booknotfound.");

}

privatevoiddeleteBook(HttpServletRequestrequest,HttpServletResponseresponse)throws SQLException, IOException {

int id =Integer.parseInt(request.getParameter("id"));

PreparedStatementps=conn.prepareStatement("DELETEFROMbooksWHEREid=?"); ps.setInt(1, id);

introws = ps.executeUpdate();

response.getWriter().println(rows>0?"Bookdeleted.":"Booknotfound.");

}

publicvoiddestroy(){ try {

conn.close();

}catch(SQLExceptione){

// ignore

}

}

}

## HTMLForm

<!DOCTYPEhtml>

<html>

<head><title>FormSubmission</title></head>

<body>

<h2>SubmitYour Info</h2>

<form action="FormHandlerServlet" method="post"> Name: <input type="text" name="name"><br><br> Email:<inputtype="email"name="email"><br><br>

<inputtype="submit"value="Submit (POST)">

</form>

<br><hr><br>

<form action="FormHandlerServlet" method="get"> Name: <input type="text" name="name"><br><br> Email:<inputtype="email"name="email"><br><br>

<inputtype="submit"value="Submit (GET)">

</form>

</body>

</html>

**ServletCode:**FormHandlerServlet.java import java.io.\*;

import javax.servlet.\*; importjavax.servlet.http.\*;

publicclassFormHandlerServletextendsHttpServlet{

//HandlesGETrequests(e.g., frommethod="get")

protectedvoiddoGet(HttpServletRequestrequest,HttpServletResponseresponse) throws ServletException, IOException {

response.setContentType("text/html"); PrintWriter out = response.getWriter();Stringname = request.getParameter("name");

Stringemail=request.getParameter("email"); out.println("<html><body>"); out.println("<h2>Received via GET</h2>"); out.println("<p>Name: " + name + "</p>"); out.println("<p>Email: " + email + "</p>"); out.println("</body></html>");

}

//HandlesPOSTrequests(e.g.,frommethod="post")

protectedvoiddoPost(HttpServletRequestrequest,HttpServletResponseresponse) throws ServletException, IOException {

response.setContentType("text/html"); PrintWriter out = response.getWriter();Stringname =request.getParameter("name");

Stringemail=request.getParameter("email"); out.println("<html><body>");

out.println("<h2>ReceivedviaPOST</h2>"); out.println("<p>Name: " + name + "</p>"); out.println("<p>Email: " + email + "</p>"); out.println("</body></html>");

}

}

## PurposeofSessionHandlinginServlets

**Session handling** in servlets is used to maintain **stateful information** between a **client and server** across multiple HTTP requests. Since HTTP is a **stateless protocol**, session handling helps preserve user-specific data like login status, shopping carts, or preferences

## Why Use Sessions?

* + Toremember auserafterlogin.
  + Totrack items ina shopping cart.
  + To storetemporarydata like user selections or messages.

## CommonSessionAPIsinServlets

* + HttpSessionsession =request.getSession();
  + session.setAttribute("key",value);
  + session.getAttribute("key");
  + session.invalidate();—tologoutorendsession.

## LoginForm.html

<!DOCTYPEhtml>

<html>

<head><title>Login</title></head>

<body>

<h2>LoginPage</h2>

<formaction="LoginServlet"method="post">

Username:<inputtype="text"name="username"><br><br>

<inputtype="submit"value="Login">

</form>

</body>

</html>**LoginServlet.java**import java.io.\*; importjavax.servlet.\*;

import javax.servlet.http.\*;

publicclass LoginServlet extendsHttpServlet{

protectedvoiddoPost(HttpServletRequestrequest,HttpServletResponseresponse) throws ServletException, IOException {

String username = request.getParameter("username"); HttpSession session = request.getSession();// Create a session session.setAttribute("user", username); //Storedatainsession

response.sendRedirect("WelcomeServlet"); //Redirecttowelcome page

}

}

**WelcomeServlet.java**import java.io.\*; importjavax.servlet.\*;

import javax.servlet.http.\*;

publicclassWelcomeServletextendsHttpServlet{

protectedvoiddoGet(HttpServletRequestrequest,HttpServletResponseresponse) throws ServletException, IOException {

HttpSessionsession=request.getSession(false);//Don'tcreateanewsession response.setContentType("text/html");

PrintWriterout =response.getWriter();

if(session!=null&&session.getAttribute("user")!=null){ String user = (String) session.getAttribute("user"); out.println("<h2>Welcome, " + user + "!</h2>");

}else {

out.println("<h2>Pleaseloginfirst.</h2>");

}

}

}

# FileUploadinginPHP—Step-by-StepwithExample

PHPprovidesasimplewaytouploadfiles fromanHTMLform usingthe$\_FILESsuperglobal.

# ◻◻1.SetupRequirements

To uploadfiles:

* + Theformmustuseenctype="multipart/form-data".
  + Theformmethod shouldbe POST.
  + PHPmusthavefile\_uploads=Onenabledinphp.ini.

## Upload\_form.html

<!DOCTYPEhtml>

<html>

<head><title>FileUpload</title></head>

<body>

<h2>Upload a File</h2>

<formaction="upload.php"method="post"enctype="multipart/form-data"> Select file: <input type="file" name="myfile"><br><br>

<inputtype="submit"name="submit"value="Upload">

</form>

</body>

</html>

## Upload.php

<?php

if($\_SERVER['REQUEST\_METHOD']=='POST'){

if(isset($\_FILES['myfile'])&&$\_FILES['myfile']['error']==0){

$uploadDir="uploads/";

$filename=basename($\_FILES["myfile"]["name"]);

$targetFile=$uploadDir.$filename;

//Optional:validatefiletype,size, etc.

$fileType=strtolower(pathinfo($targetFile,PATHINFO\_EXTENSION)); if (!in\_array($fileType, ["jpg", "png", "pdf", "txt"])) {

echo"OnlyJPG,PNG, PDF,or TXT files are allowed.";

exit;

}

//Createdirectoryifnotexists if (!file\_exists($uploadDir)) {

mkdir($uploadDir,0777,true);

}

//Moveuploaded file

if(move\_uploaded\_file($\_FILES["myfile"]["tmp\_name"],$targetFile)){ echo "File uploaded successfully: " . htmlspecialchars($filename);

}else {

echo "Erroruploading file.";

}

}else {

echo "Nofileuploadedoranerror occurred.";

}

}

?>

1. DeviseasimplePHPcodethatdemonstratesreadingfromandwritingintofile?

**File\_rw\_demo.php**

<?php

$filename="sample.txt";

//Writingto afile

$content="Hello,thisisasamplefile.\nThisisthesecondline.\n"; file\_put\_contents($filename, $content);

//Appendingmore content

file\_put\_contents($filename,"Thisisanappended line.\n",FILE\_APPEND);

//Readingfromthefile

if(file\_exists($filename)){

echo "<h3>Contentsofthe file:</h3>";

$fileContent= file\_get\_contents($filename);

echonl2br(htmlspecialchars($fileContent));//Convertsnewlinesto<br>

}else {

echo "Filedoesnotexist.";

}

?>

## Output

Contents of the file:

Hello,thisisasamplefile. This is the second line.

Thisisanappendedline.

Here'sa**simple PHPfunction**toestablishaconnectiontoa**MySQLdatabaseserver**using

**MySQLi**(object-oriented approach):

<?php

functionconnectDB(){

$servername="localhost";// or127.0.0.1

$username="root"; // yourMySQLusername

$password= ""; // yourMySQLpassword

$dbname= "test\_db"; //name ofthe database

//Createconnection

$conn=newmysqli($servername,$username,$password,$dbname);

//Checkconnection

if($conn->connect\_error){

die("Connectionfailed: ". $conn->connect\_error);

}

echo"Connected successfully!";

return$conn;

}

// Exampleusage

$conn=connectDB();

//Always closetheconnectionwhendone

$conn->close();

?>

Here's a **Java Servlet example** that connects to a **MySQL database** using **JDBC**, retrievesanemployee'sdetails(basicsalary,allowances,deductions),calculatesthe **net salary**, and displays it.

## Theservlet:

* + Takesemployee IDasinput (viarequest).
  + Connectstothe database.
  + Retrievessalarycomponents forthat employee.
  + Calculatesnet salary:

NetSalary=Basic+Allowances-Deductions

* + Displaysthe resultinan HTMLresponse.

Employee database Table : CREATETABLEemployees(

idINTPRIMARYKEY, name VARCHAR(100),

basic\_salaryDOUBLE, allowance DOUBLE, deduction DOUBLE

);

--ExampleData

INSERTINTOemployeesVALUES(101,'Alice',50000,10000,5000);

## NetSalaryServlet.java

import java.io.\*; importjavax.servlet.\*;

importjavax.servlet.http.\*; import java.sql.\*;

publicclassNetSalaryServletextendsHttpServlet{

privateConnectionconn;

publicvoidinit()throwsServletException{ try {

Class.forName("com.mysql.cj.jdbc.Driver"); conn = DriverManager.getConnection(

"jdbc:mysql://localhost:3306/payroll","root","password"

);

}catch(Exceptione){

thrownewServletException("DBConnectionFailed",e);

}

}

protectedvoiddoGet(HttpServletRequestrequest,HttpServletResponseresponse) throws ServletException, IOException {

StringempIdStr=request.getParameter("id"); PrintWriter out = response.getWriter(); response.setContentType("text/html");

if(empIdStr==null) {

out.println("<h3>EmployeeIDisrequired.</h3>"); return;

}

intempId=Integer.parseInt(empIdStr); try {

PreparedStatement ps=conn.prepareStatement(

"SELECTname,basic\_salary,allowance,deductionFROMemployees WHERE id = ?"

);

ps.setInt(1,empId);

ResultSetrs=ps.executeQuery(); if (rs.next()) {

Stringname=rs.getString("name");

double basic = rs.getDouble("basic\_salary"); doubleallowance=rs.getDouble("allowance"); double deduction =rs.getDouble("deduction");

doublenetSalary=basic+allowance-deduction;

out.println("<h2>EmployeeSalaryDetails</h2>"); out.println("Name: " + name + "<br>");

out.println("Basic Salary: ₹" + basic + "<br>"); out.println("Allowance:₹"+allowance+"<br>"); out.println("Deduction: ₹" + deduction + "<br>");

out.println("<strong>NetSalary:₹"+netSalary+ "</strong>");

}else {

out.println("<h3>Employeenot found!</h3>");

}

}catch(SQLExceptione){

out.println("<h3>Errorretrievingemployeedata.</h3>"); e.printStackTrace(out);

}

}

publicvoiddestroy(){ try {

if(conn !=null) conn.close();

}catch(SQLExceptione){

//Silent close

}

}

}