



SAVEETHA SCHOOL OF ENGINEERING
SIMATS, CHENNAI



Course Code /Title: CSA4399 – Internet Programming
Programme : Computer Science and Engineering

ASSIGNMENT 4 QUESTIONS

S.No	Questions	Marks	CO	BTL
1	From a developer's perspective, discuss why JDBC is essential in building database-driven applications. How to achieve JDBC CONNECTION pooling using JDBC Data Source and JNDI in Apache Tomcat Server. Provide examples of executing SQL queries using JDBC statements. Discuss the differences between Statement, Prepared Statement, and Callable Statement.	20	CO5	3
2	Describe the lifecycle phases of a JSP page. Explain the significance of each phase in the JSP execution process. Discuss the different ways to embed Java code within a JSP page with examples. Explain the advantages and disadvantages of using scriptlets, declarations, and expressions in JSP.	20	CO4	2
3	You need to develop a PHP program that generates a chessboard using HTML tables. The table should have a total width of 400px, and each cell should have a height and width of 30px. The chessboard should alternate colors between black and white for each cell to represent a typical chessboard layout. How would you write a PHP program using nested for loops to create a chessboard? The chessboard should be displayed using an HTML table with a total width of 400px, and each cell should have a height and width of 30px. Explain how you would use the nested for loops to alternate the cell colors and ensure the chessboard pattern is correctly displayed. Provide the code for this program	20	CO4	2
	You are developing a PHP application that reads content from a text file and uses regular expressions to extract specific patterns, such as email addresses and phone numbers. After extracting the data, the application should store the results in a new XML file following a defined schema for the data. Additionally, you need to compare and contrast DTD (Document Type Definition) and XML Schema for defining the XML structure. How would you create a PHP application that reads content from a text file and uses regular expressions to extract specific patterns (e.g.,	20	CO5	2



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email addresses and phone numbers)? After extracting the data, store the results in a new XML file following a defined schema for the data. Additionally, compare and contrast DTD and XML Schema for defining XML structure. Describe the steps and provide the code for the application.

Assignment - 4

Why JDBC is Essential in Building Database Driven Applications

JDBC is essential because it provides Database for Java applications to interface with database.

Achieving JDBC Connection pooling using JDBC Data Source & JNDI in Apache Tomcat

Configure DataSource

<Resource name = jdbc/myDB"

auth = "Container"

type = "javax.sql.DataSource"

Max Total = "20"

Max Idle = "10"

Max wait millis = "10000"

username = "dbuser"

Password = "db Password"

driver class name = "com.mysql.jdbc.Driver"

url = "jdbc:mysql://localhost:3306/my database"/

Look DataSource in Java Code using JNDI

import javax.naming.Context;

import javax.naming.InitialContext;

import javax.sql.DataSource;

Public class DatabaseUtil {

public static Connection get Connection ()
throws Exception {

return ds.get Connection ();

}

① Using Statement:

```
try (Connection Conn = DatabaseUtil.get Connection ();  
    Statement stmt = Conn.createStatement ();  
    String Query = "SELECT * FROM Users";  
    while (rs.next ()) {  
        System.out.println ("User ID : " + rs.getInt  
        );  
    }
```

② Using a prepared statement.

```
try (Connection Conn = DatabaseUtil.get Connection ();  
    PreparedStatement pstmt = Conn.prepareStatement  
    while (rs.next ()) {  
        System.out.println ("User ID : " + rs.getInt  
        (1) + " Name : " + rs.getString ("name")
```

Output

Statement Example output:

User ID: 1, Name: Chait

User ID 2, Name: Sai

Prepared statement:

User ID: 1, Name: Chait

Called Statement

User ID: 1, Name: Chait

② life cycle phases of Jsp page.

① Translation phase

② Compilation phase

③ Initialization phase.

④ Request processing phase

⑤ Destruction phase

Embedding Java Code in Jsp

① Scriptlet.

```
<% int Sum = 5+10; %>
```

```
<p> The Sum is <% = Sum; %>
```

output

The Sum = 15.

② Declaration

```
<% int add (int a, int b) { return a+b; } %>
```

```
<p> The result is : <% = add (3, 7); %> </p>
```

output

The result = 10

③ Expression

```
<p> Current time <% = new java.util.Date(); %> </p>
```

output

Current time: Mon Sep 09 9:36:00 PDT 2024.

③ Generate a Chess board using HTML table with width of 400px (total) & Each Cell height width of 30px.

PHP Code :

```
<!DOCTYPE html>
```

```
<html lang="en">
```

```
<head>
```

```
<meta charset="UTF-8">
```

```
<title> chess board </title>
```

```
<style>
```

```
table {
```

```
width: 400px;
```

```
border-collapse: collapse;
```

```
{
```

```
td {
```


1. Read ~~Context~~ from a text file.

- PHP Code:

`<?php`
`$file_name = "input.txt";`
`$content = file_get_contents($file_name);`
`preg_match_all('/[0-9]{1,3}[-][0-9]{1,3}[-][0-9]{1,3}/', $content, $matches);`
`$xml = new SimpleXMLElement('<data></data>');`
`$email_element = $xml->add_child('email');`
`$email_element->add_child('email'; $email);`

3. \$xml → as xml ('output.xml')

echo Data extracted and saved to output.xml

3 >

$\langle \text{data} \rangle$

(email)

Example - $\langle \text{email} \rangle$ Example - $\text{Com} \langle \text{email} \rangle$.

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phones

21 dates