PRACTICAL NO. 08

Aim: Develop a script that uses MongoDB's aggregation framework to perform sorting. For instance, aggregate user data to find the average age of users in different cities.

Software Used:

Program:

// Initialize the Project

```
mkdir mongodb-aggregation
cd mongodb-aggregation
npm init -y
npm install mongodb
```

// Program08.js

```
const { MongoClient } = require('mongodb');
const uri = "mongodb://127.0.0.1:27017";
const dbName = "testdb";
const collectionName = "users";
async function runAggregation(){
        const client = new MongoClient(uri);
        try{
                await client.connect();
                console.log("Connected to MongoDB");
                const db = client.db(dbName);
                const collection = db.collection(collectionName);
                const pipeline =
                [
                        { $match: { age: { $gte: 20 } } },
                        {
                                $group:
                                {
                                        _id: "$city",
                                        averageAge: { $avg: "$age" },
                                        userCount: { $sum: 1 },
                                },
                        },
                        { $sort: { averageAge: -1 } },
                ];
                const results = await collection.aggregate(pipeline).toArray();
```

```
                console.log("Aggregation Results:");
                results.forEach((result) =>{
                        console.log(`City: ${result._id}`);
                        console.log(`Average Age: ${result.averageAge.toFixed(2)}`);
                        console.log(`User Count: ${result.userCount}`);
                        console.log("----------------------");
                });
        }
        catch (err){
                console.error("Error running aggregation:", err);
        }
        finally{
                await client.close();
        }
}
runAggregation();
```

// Insert Data

```
mongo
use testdb
db.users.insertMany([
        { name: "Alice", age: 25, city: "New York" },
        { name: "Bob", age: 30, city: "San Francisco" },
        { name: "Charlie", age: 35, city: "New York" },
        { name: "David", age: 40, city: "Los Angeles" },
        { name: "Eve", age: 45, city: "San Francisco" }
])
```

OUTPUT

```
+-------------------------+
|   Aggregation Results   |
+-------------------------+
| City: San Francisco     |
| Average Age: 37.50      |
| User Count: 2           |
+-------------------------+
| City: New York          |
| Average Age: 30.00      |
| User Count: 2           |
+-------------------------+
| City: Los Angeles       |
| Average Age: 40.00      |
| User Count: 1           |
+-------------------------+
```

Signature:
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Group: G2
Section: A
Semester: 5th

PRACTICAL NO. 09

Aim: Assume four users user1, user2, user3 and user4 having the passwords pwd1, pwd2, pwd3 and pwd4 respectively. Write a PHP for doing the following:

1. Create a Cookie and add these four user ID's and passwords to this Cookie.

2. Read the user id and passwords entered in the Login form and authenticate with the values available in the cookies.

Software Required: VS Code

Program:

// coklogcheck.html

```
<html>
	<head>
		<title>website</title>
	</head>
	<body>
			<form method="POST" name="frmlogin" action="coklogcheck.php">
			<table border="0">
				<tr>
					<td>Login:</td>
					<td><input name="Uname" type="text" ></td>
				</tr>
				<tr>
					<td>Password:</td>
					<td><input name="password" type="password" ></td>
				</tr>
				<tr>
					<input type="hidden" name="hdnProcess" value="1"/>
					<td><input type="submit" name="sbt"
					value="Submit"/></td>
					<td><input type="button" name="res"
				value="Reset"/></td>
				</tr>
			</table>
		</form>
	</body>
</html>
```

// coklogcheck.php

```
<?php
```

```
        setcookie("user2","guru");
        setcookie("user3","eshwar");
        setcookie("user4","vinay");
        setcookie("pass1","pavan");
        setcookie("pass2","guru");
        setcookie("pass3","eshwar");
        setcookie("pass4","vinay");
        $UserId = $_POST['Uname'];
        $passwd = $_POST['password'];
        if( ($_COOKIE['user1']==$UserId && $_COOKIE['pass1']==$passwd ) ||
        ($_COOKIE['user2']==$UserId && $_COOKIE['pass2']==$passwd ) ||
        ($_COOKIE['user3']==$UserId && $_COOKIE['pass3']==$passwd )||
        ($_COOKIE['user4']==$UserId && $_COOKIE['pass4']==$passwd ) )
        { echo "success"; }
        else {
                echo "failure";
        }
?>
```

OUTPUT

Signature:
Name: Amit Kumar Singh
Roll No.: 2201920100053
Group: G2
Section: A
Semester: 5th

PRACTICAL NO. 10

Aim: Create a table which should contain at least the following fields: name, password, email-id, phone number. Write Servlet/JSP to connect to that database and extract data from the tables and display them. Insert the details of the users who register with the web site, whenever a new user clicks the submit button in the registration page.

Software Required: VS Code

Program:

// SQL Database

```
CREATE DATABASE mydb;
USE mydb;
CREATE TABLE users (
        id INT AUTO_INCREMENT PRIMARY KEY,
        name VARCHAR(45) NOT NULL,
        password VARCHAR(45) NOT NULL,
        email VARCHAR(45) NOT NULL,
        phone_number VARCHAR(15) NOT NULL
);
```

// register.html

```
<!DOCTYPE html>
<html>
        <head>
                <title>User Registration</title>
        </head>
        <body>
                <h2>Register</h2>
                <form action="RegisterServlet" method="post">
                        Name: <input type="text" name="name" required><br>
                        Password: <input type="password" name="password" required><br>
                        Email: <input type="email" name="email" required><br> Phone
                        Number: <input type="text" name="phone_number" required><br>
                        <input type="submit" value="Submit">
                </form>
        </body>
</html>
```

// RegisterServlet.java

```
import java.io.IOException;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
@WebServlet("/RegisterServlet")
public class RegisterServlet extends HttpServlet {
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
        String name = request.getParameter("name");
        String password = request.getParameter("password");
        String email = request.getParameter("email");
        String phoneNumber = request.getParameter("phone_number");
        String jdbcURL = "jdbc:mysql://localhost:3306/mydb";
        String dbUser = "root";
        String dbPassword = "secret";
        try {
            Class.forName("com.mysql.jdbc.Driver");
            Connection connection = DriverManager.getConnection(jdbcURL,
            dbUser, dbPassword);
```

```
                String sql = "INSERT INTO users (name, password, email,
                phone_number) VALUES (?, ?, ?, ?)";
                PreparedStatement statement = connection.prepareStatement(sql);
                statement.setString(1, name);
                statement.setString(2, password);
                statement.setString(3, email);
                statement.setString(4, phoneNumber);
                statement.executeUpdate();
                connection.close();
                response.sendRedirect("success.html");
            }
            catch (Exception e) {
                e.printStackTrace();
            }
        }
}
```

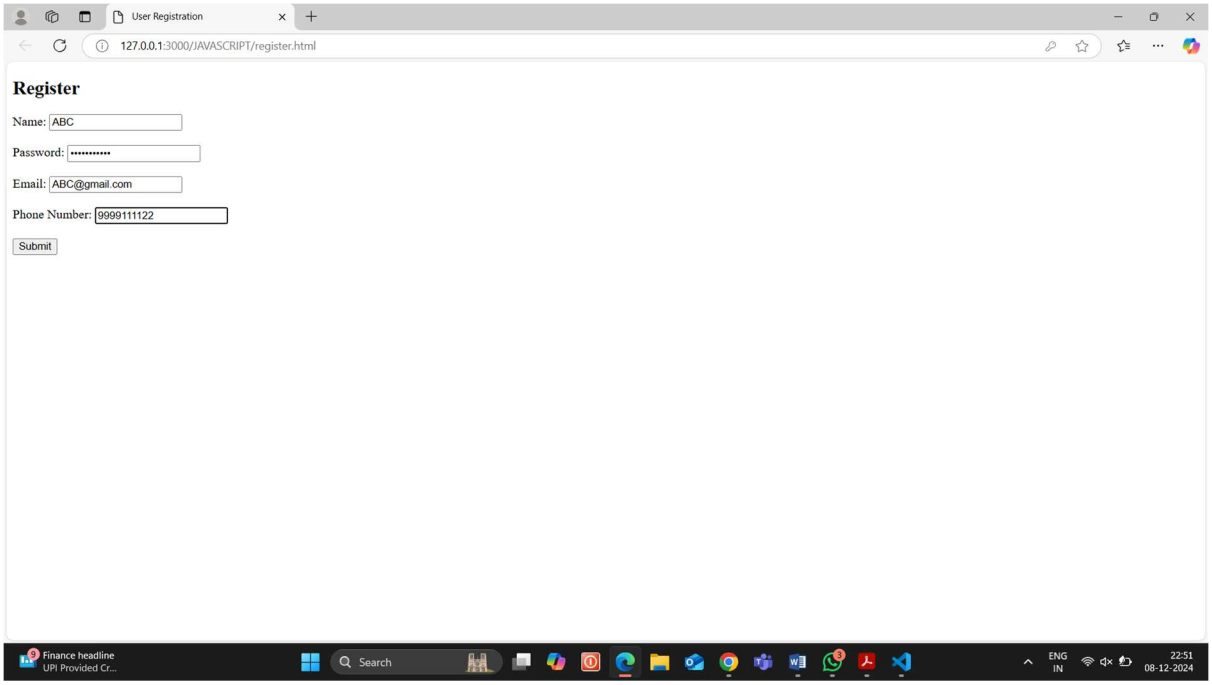
// listUsers.jsp

```
<%@ page import="java.sql.*" %>
<!DOCTYPE html>
<html>
    <head>
        <title>Registered Users</title>
    </head>
    <body>
```

```
<h2>List of Registered Users</h2>
<table border="1">
    <tr>
        <th>ID</th>
        <th>Name</th>
        <th>Email</th>
        <th>Phone Number</th>
    </tr>
    <%
        String jdbcURL = "jdbc:mysql://localhost:3306/mydb";
        String dbUser = "root";
        String dbPassword = "secret";
        try {
        Class.forName("com.mysql.jdbc.Driver");
        Connection connection = DriverManager.getConnection(jdbcURL,
        dbUser, dbPassword);
        Statement statement = connection.createStatement();
        ResultSet resultSet = statement.executeQuery("SELECT * FROM
        users");
        while (resultSet.next()) {
        int id = resultSet.getInt("id");
        String userName = resultSet.getString("name");
        String userEmail = resultSet.getString("email");
        String userPhoneNumber = resultSet.getString("phone_number");
    %>
    <tr>
```

```
                        <td><%= id %></td>
                        <td><%= userName %></td>
                        <td><%= userEmail %></td>
                        <td><%= userPhoneNumber %></td>
                    </tr>
                    <%
                        } connection.close();
                    }
                    catch (Exception e) {
                        e.printStackTrace();
                    }
                    %>
                </table>
            </body>
</html>
```

OUTPUT



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Section: A
Semester: 5th

PRACTICAL NO. 11

Aim: Write the JSP which insert which insert the details of 3 or 4 users who register on the website using registration form. Authenticate the user when he submits the login form using the username and password from the database.

Software Required: VS Code

Program:

// Login.html

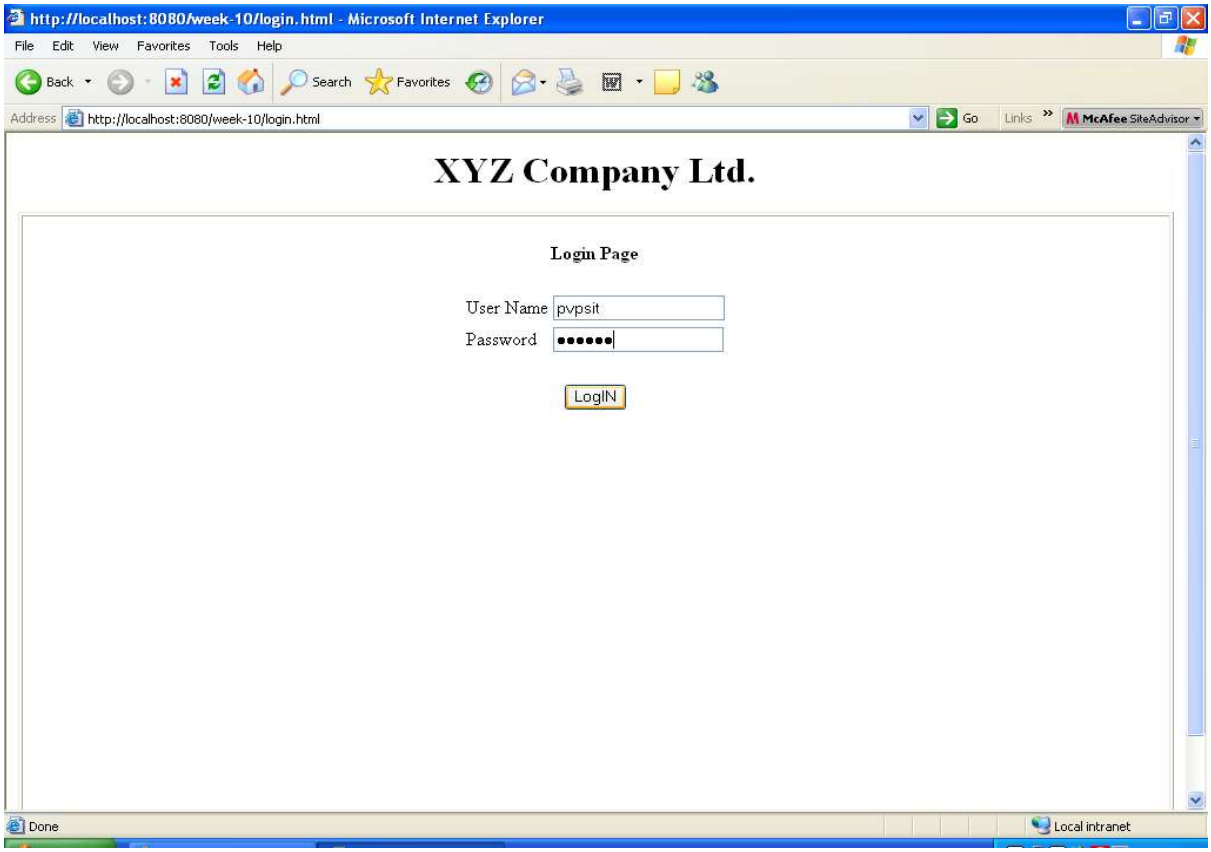
```
<html>
<body>
	<center><h1>XYZ Company Ltd.</h1></center>
	<table border="1" width="100%" height="100%">
	<tr>
		<td valign="top" align="center"><br/>
			<form action="auth.jsp"><table>
			<tr>
				<td colspan="2" align="center"><b>Login Page</b></td>
			</tr>
			<tr>
				<td colspan="2" align="center"><b> </td>
			</tr>
			<tr>
				<td>User Name</td>
				<td><input type="text" name="user"/></td>
			</tr>
			<tr>
				<td>Password</td>
				<td><input type="password" name="pwd"/></td>
			</tr>
			<tr>
				<td> </td>
				<td> </td>
			</tr>
			<tr>
				<td colspan="2" align="center"><input type="submit"
				value="LogIN"/></td>
			</tr>
			</form>
```

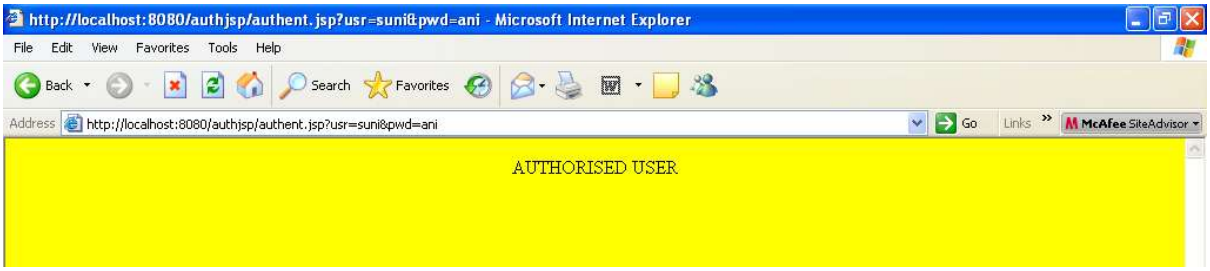
```
                </td>
        </tr>
        </table>
</body>
</html>
```

// Auth.jsp

```
<%@page import="java.sql.*;"%>
<html>
        <head>
                <title>This is simple data base example in JSP</title>
        </head>
        <body bgcolor="yellow">
                <%!String uname,pwd;%>
                <%
                        uname=request.getParameter("user");
                        pwd=request.getParameter("pwd");
                         try{
                                Class.forName("oracle.jdbc.driver.OracleDriver");
                                Connection con =
                                DriverManager.getConnection("jdbc:oracle:thin:@195.100.101.15
                                8:1521:CCLAB","scott","tiger");
                                Statement st=con.createStatement();
                                ResultSet rs=st.executeQuery("select name,password from
                                personal where name='"+uname+"' and password='"+pwd+"'");
                                if(rs.next()){
                                        out.println("Authorized person");
                                }
                                else{
                                        out.println("UnAuthorized person");
                                }
                                con.close();
                        }
                        catch(Exception e){
                                out.println(""+e);
                        }
                %>
        </body>
</html
```

OUTPUT





Signature:
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Group: G2
Section: A
Semester: 5th

PRACTICAL NO. 12

Aim: Design and implement a simple shopping cart example with session tracking API.
Software Required: VS Code
Program:

// ShoppingCart.html

```
<!DOCTYPE html>
<html>
	<head>
		<title> Shopping Cart</title>
	</head>
	<body>
		<h3>Cookie Example through Shopping Cart</h3>
		<form method="get" action="http://localhost:8888/india/SC">
		Enter Item Name <input type="text" name="item"><br> Enter Item Quantity
		<input type="text" name="qty"><br>
		<input type="submit" value="Add Cookie" name="add">
		<input type="submit" value="List Cookies" name="list">

		</form>
	</body>
</html>
```

// web.xml entry for ShoppingCart servlet

```
<servlet>
	<servlet-name>snrao1</servlet-name>
	<servlet-class>ShoppingCart</servlet-class>
</servlet>

<servlet-mapping>
	<servlet-name>snrao1</servlet-name>
	<url-pattern>/SC</url-pattern>
</servlet-mapping>
```

// ShoppingCart.java

```
import java.io.*; import javax.servlet.*;
import javax.servlet.http.*;
public class ShoppingCart extends HttpServlet {
```

```
        public void service(HttpServletRequest req,HttpServletResponse res) throws
        ServletException, IOException {
                String str1 = req.getParameter("item");
                // item name String str2 = req.getParameter("qty");
                // item quantity
                String str3 = req.getParameter("add");
                String str4 = req.getParameter("list");
                res.setContentType("text/html");
                PrintWriter out = res.getWriter();

                if(str3 != null) {
                        Cookie c1 = new Cookie(str1, str2); res.addCookie(c1);
                        res.sendRedirect("ShoppingCart.html");
                }
                else if(str4 != null) {
                        Cookie clientCookies[] = req.getCookies();
                        for( int i = 0; i < clientCookies.length; i++) {
                                out.print("<B>" + clientCookies[i].getName() + " : " +
                                clientCookies[i].getValue() + "</B><BR>");
                        }
                }
                out.close( ) ;
        }
}
```

OUTPUT

Signature:
Name: Amit Kumar Singh
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Group: G2
Section: A
Semester: 5th