MAHATMA EDUCATION SOCIETY'S

PILLAI COLLEGE OF ARTS, COMMERCE & SCIENCE
(Autonomous)

NEW PANVEL

PROJECT REPORT ON

"Sports Tournament Management System"

IN PARTIAL FULFILLMENT OF

BACHELOR OF <u>SCIENCE INFORMATION TECHNOLOGY</u>

SEMESTER <u>V</u>– 2024-25

PROJECT GUIDE

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ROLL NO: 9524

Mahatma Education Society's
PILLAI COLLEGE OF ARTS, COMMERCE & SCIENCE (Autonomous),
New Panvel
Re-accredited "A" Grade by NAAC (3rd Cycle)

Project Completion Certificate
THIS IS TO CERTIFY THAT

<u>Mr. Mehtab Singh Randhawa</u>

of **TYIT** has completed the project titled

<u>"Sports Tournament Management System"</u>

Under our guidance and supervision during the academic year
2024-25 in the department of

Information Technology

| Course Coordinator | Head Of Department | Project Guide |

INTRODUCTION

The **Sports Tournament Management System** is a web-based platform designed to streamline the management and organization of sports tournaments. It allows administrators to create, update, delete, and view various tournaments, along with key details such as the tournament name, location, dates, and the sports involved. The system provides user authentication via sign-up and sign-in pages, ensuring secure access for administrators to manage the events. Through an intuitive interface, it efficiently handles the entire lifecycle of a sports tournament, enabling organizations to focus on delivering successful tournaments without being overwhelmed by administrative tasks.

Transactions Performed in the Project

In this project, the following transactions are performed:

1. **User Registration (Sign Up):** Inserts user details into the database.

2. **User Login (Sign In):** Authenticates user credentials by querying the database.

3. **Create Tournament:** Inserts a new tournament into the database.

4. **Update Tournament:** Updates the details of an existing tournament in the database.

5. **Delete Tournament:** Deletes a tournament from the database.

6. **View Tournaments:** Retrieves and displays a list of tournaments from the database.

These six types of transactions facilitate the core functionalities of the system, ensuring smooth user interactions and effective tournament management.

TOOLS AND TECHNIQUES USED

This project leverages several technologies and tools to create a robust and user-friendly sports management system:

1. **Java Servlets:** The core logic of the application is handled through servlets, which process user requests, interact with the database, and generate dynamic content.

2. **JavaServer Pages (JSP):** JSPs are used to create dynamic web pages for the front end, such as sign-up, sign-in, and dashboard interfaces.

3. **Apache Derby Database:** The application uses Apache Derby as the backend database to store and manage tournament details and user credentials.

4. **HTML/CSS:** Standard web development technologies are used to structure and style the web pages, ensuring a modern and responsive design.

5. **Bootstrap:** This popular front-end framework is employed for styling forms and layouts, offering a clean and responsive design.

6. **SQL:** SQL queries are used to perform CRUD (Create, Read, Update, Delete) operations on the database for managing tournaments and user accounts.

CODE

index.html:

```html
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Welcome to Sports Tournament Management System</title>
  </head>
<body>
  <div class="container">
    <h1>Welcome to Sports Tournament Management System</h1>
    <p>Efficiently create and manage your sports tournaments!</p>

    <!-- Action buttons -->
    <a href="signup.jsp">Sign Up</a>
    <a href="signin.jsp">Sign In</a>

    <!-- Graphic Icons for aesthetic -->
    <div class="icons">
      <img src='Hockey.jpeg'  alt="Hockey">
      <img src='cricket.jpg' alt="Cricket">
      <img src='tennis.jpg' alt="Tennis">
    </div>
  </div>
</body>
</html>
```

signup.jsp:

```jsp
<%@ page contentType="text/html;charset=UTF-8" language="java" %>
<html>
<head>
  <title>Sign Up</title>
  <!-- Bootstrap CSS -->
  <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css">
    </head>
<body>
  <div class="container">
    <h2>Sign Up</h2>
```

```
<!-- Display error message if any -->
<%
    String errorMessage = request.getParameter("error");
    if (errorMessage != null) {
%>
    <p class="error"><%= errorMessage %></p>
<%
    }
%>
<!-- Signup Form -->
<form action="SignupServlet" method="POST">
    <div class="form-group">
        <label for="username">Username</label>
        <input type="text" name="username" class="form-control" id="username"
required>
    </div>
    <div class="form-group">
        <label for="email">Email</label>
        <input type="email" name="email" class="form-control" id="email" required>
    </div>
    <div class="form-group">
        <label for="password">Password</label>
        <input type="password" name="password" class="form-control"
id="password" required>
    </div>
    <div class="form-group">
        <label for="confirmPassword">Confirm Password</label>
        <input type="password" name="confirmPassword" class="form-control"
id="confirmPassword" required>
    </div>
    <button type="submit" class="btn btn-primary">Sign Up</button>
</form>
<!-- Redirect to Sign In -->
<div class="text-center mt-3">
    <p>Already have an account? <a href="signin.jsp">Sign In here</a>.</p>
</div>
</div>
<!-- Bootstrap JS -->
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>
```

```
    <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/js/bootstrap.min.js"></script>
</body>
</html>
```

signin.jsp:

```jsp
<%@ page contentType="text/html;charset=UTF-8" language="java" %>
<html>
<head>
    <title>Sign In</title>
   </head>
<body>
   <div class="container">
      <h2>Sign In</h2>

      <!-- Display error message if exists -->
      <%
         String errorMessage = request.getParameter("error");
         if (errorMessage != null) {
      %>
         <p class="error"><%= errorMessage %></p>
      <%
         }
      %>

      <!-- Admin Login Section -->
      <div class="section">
         <form action="AdminLoginServlet" method="POST">
            Username: <input type="text" name="adminUsername" required><br><br>
            Password: <input type="password" name="adminPassword"
required><br><br>
            <input type="submit" value="Log In">
         </form>
      </div>
   </div>
</body>
</html>
```

SignUpServlet.java:

```java
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.annotation.*;
import javax.servlet.http.*;
import javax.servlet.ServletException;
import java.sql.*;

@WebServlet(urlPatterns = {"/SignupServlet"})
public class SignupServlet extends HttpServlet {
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {

        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();

        // Get form parameters from the signup form
        String username = request.getParameter("username");
        String email = request.getParameter("email");
        String password = request.getParameter("password");
        String confirmPassword = request.getParameter("confirmPassword");

        // Validate the form input
        if (!password.equals(confirmPassword)) {
            // Redirect to signup page with error if passwords don't match
            response.sendRedirect("signup.jsp?error=Passwords do not match");
            return;
        }

        // Database connection details
        Connection connection = null;
        PreparedStatement preparedStatement = null;

        try {
            // Load JDBC Driver
            Class.forName("org.apache.derby.jdbc.ClientDriver");

            // Establish connection to the database
```

```
        connection =
DriverManager.getConnection("jdbc:derby://localhost:1527/Tournament", "app", "app");

        // SQL query to insert admin data into the database
        String sql = "INSERT INTO admins (username, email, password) VALUES (?, ?,
?)";

        preparedStatement = connection.prepareStatement(sql);
        preparedStatement.setString(1, username);
        preparedStatement.setString(2, email);
        preparedStatement.setString(3, password); // Note: Passwords should be
hashed in production

        // Execute the insert query
        int result = preparedStatement.executeUpdate();

        if (result > 0) {
            // Signup successful, redirect to the sign-in page
            response.sendRedirect("signin.jsp");
        } else {
            // If something goes wrong, redirect back to the signup page with an error
            response.sendRedirect("signup.jsp?error=Signup failed, please try again");
        }

    } catch (ClassNotFoundException | SQLException e) {
        out.println("Error: " + e.getMessage());
        // Log the error and redirect back to the signup page with a generic error
        response.sendRedirect("signup.jsp?error=An error occurred during signup");
    } finally {
        // Close all database connections
        try {
            if (preparedStatement != null) preparedStatement.close();
            if (connection != null) connection.close();
        } catch (SQLException e) {
            out.println("Error closing resources: " + e.getMessage());
        }
    }
  }
}
```

AdminLoginServlet.java:

```java
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.annotation.*;
import javax.servlet.http.*;
import javax.servlet.ServletException;
import java.sql.*;

@WebServlet("/AdminLoginServlet")
public class AdminLoginServlet extends HttpServlet {
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {

        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();

        // Retrieve the admin username and password from the form
        String adminUsername = request.getParameter("adminUsername");
        String adminPassword = request.getParameter("adminPassword");

        // Flag to check login success
        boolean loginSuccess = false;

        // Database connection
        Connection connection = null;
        PreparedStatement preparedStatement = null;
        ResultSet resultSet = null;

        try {
            // Load JDBC Driver
            Class.forName("org.apache.derby.jdbc.ClientDriver"); // Correct driver for Derby

            // Establish connection to the database
            connection =
DriverManager.getConnection("jdbc:derby://localhost:1527/Tournament", "app", "app");

            // SQL query to verify admin login
            String sql = "SELECT * FROM admins WHERE username = ? AND password =
?";
```

```java
            preparedStatement = connection.prepareStatement(sql);
            preparedStatement.setString(1, adminUsername);
            preparedStatement.setString(2, adminPassword); // Note: Passwords should be
hashed in production

            resultSet = preparedStatement.executeQuery();

            // If the result set has data, login is successful
            if (resultSet.next()) {
                loginSuccess = true;
            }

        } catch (ClassNotFoundException | SQLException e) {
            out.println("Error: " + e.getMessage());
            response.sendRedirect("signin.jsp?error=An error occurred during login");
        } finally {
            // Close all connections
            try {
                if (resultSet != null) resultSet.close();
                if (preparedStatement != null) preparedStatement.close();
                if (connection != null) connection.close();
            } catch (SQLException e) {
                out.println("Error closing resources: " + e.getMessage());
            }
        }

        // Redirect user based on login success or failure
        if (loginSuccess) {
            // Redirect to the admin dashboard
            response.sendRedirect("adminDashboard.jsp");
        } else {
            // Redirect back to sign-in page with an error message
            response.sendRedirect("signin.jsp?error=Invalid username or password");
        }
    }
}
```

adminDashboard.jsp

```
<%@ page contentType="text/html;charset=UTF-8" language="java" %>
<html>
<head>
   <title>Admin Dashboard</title>
  </head>
<body>
   <div class="container">
      <h2>Admin Dashboard</h2>
      <div class="nav">
         <a href="CreateTournament.jsp">Create Tournament</a>
         <a href="UpdateTournament.jsp">Update Tournament</a>
         <a href="DeleteTournament.jsp">Delete Tournament</a>
         <a href="tournaments.jsp">View Tournaments</a>
      </div>
   </div>
</body>
</html>
```

CreateTournament.jsp:

```
<%@ page contentType="text/html;charset=UTF-8" language="java" %>
<%@ page import="java.sql.*" %>
<%@ page import="javax.servlet.*" %>
<%@ page import="javax.servlet.http.*" %>
<html>
<head>
   <title>Create Tournament</title>
   <link rel="stylesheet" type="text/css" href="styles.css"> <!-- Optional: Link to your
CSS for styling -->
</head>
<body>
   <div class="container">
      <h2>Create Tournament</h2>
      <form action="TournamentServlet" method="post">
         <label for="name">Tournament Name:</label>
         <input type="text" id="name" name="name" required>
         <br>
         <label for="location">Location:</label>
         <input type="text" id="location" name="location" required>
```

```
            <br>

            <label for="start_date">Start Date:</label>
            <input type="date" id="start_date" name="start_date" required>
            <br>
            <label for="end_date">End Date:</label>
            <input type="date" id="end_date" name="end_date" required>
            <br>
            <label for="sports_names">Sports Names:</label>
            <input type="text" id="sports_names" name="sports_names" required>
            <br>
            <input type="submit" value="Create Tournament">
        </form>
        <br>
        <a href="tournaments.jsp">Back to Tournaments</a>
    </div>
</body>
</html>
```

UpdateTournament.jsp:

```
<%@ page contentType="text/html;charset=UTF-8" language="java" %>
<%@ page import="java.sql.*" %>
<%@ page import="javax.servlet.*" %>
<%@ page import="javax.servlet.http.*" %>
<html>
<head>
  <title>Update Tournament</title>
  <link rel="stylesheet" type="text/css" href="styles.css"> <!-- Optional: Link to your
CSS for styling -->
</head>
<body>
  <div class="container">
    <h2>Update Tournament</h2>
    <form action="UpdateTournamentServlet" method="post">

        <label for="name">Tournament Name:</label>
        <input type="text" id="name" name="name" required>
        <br>
```

```
        <label for="location">Location:</label>
        <input type="text" id="location" name="location">
        <br>

        <label for="start_date">Start Date:</label>
        <input type="date" id="start_date" name="start_date" >
        <br>

        <label for="end_date">End Date:</label>
        <input type="date" id="end_date" name="end_date">
        <br>

        <label for="sports_names">Sports Names:</label>
        <input type="text" id="sports_names" name="sports_names">
        <br>

        <input type="submit" value="Update Tournament">
      </form>
      <br>
      <a href="tournaments.jsp">Back to Tournaments</a>
    </div>
  </body>
</html>
```

DeleteTournament.jsp:

```
<%@ page contentType="text/html;charset=UTF-8" language="java" %>
<%@ page import="java.sql.*" %>
<%@ page import="javax.servlet.*" %>
<%@ page import="javax.servlet.http.*" %>
<html>
<head>
  <title>Delete Tournament</title>
  <link rel="stylesheet" type="text/css" href="styles.css"> <!-- Optional: Link to your
CSS for styling -->
</head>
<body>
  <div class="container">
    <h2>Delete Tournament</h2>
    <form action="DeleteTournamentServlet" method="post">
```

```html
        <label for="name">Tournament Name:</label>
        <input type="text" id="name" name="name" required>
        <br>

        <input type="submit" value="Delete Tournament">
    </form>
    <br>
    <a href="tournaments.jsp">Back to Tournaments</a>
  </div>
 </body>
</html>
```

tournaments.jsp

```jsp
<%@ page import="java.sql.*" %>
<html>
<head><title>Tournaments</title></head>
<body>
<h2>List of Tournaments</h2>
<table>
  <tr><th>ID</th><th>Name</th><th>Location</th><th>Start Date</th><th>End Date</th></tr>
  <%
    try {
      Class.forName("org.apache.derby.jdbc.ClientDriver");
      Connection c=DriverManager.getConnection("jdbc:derby://localhost:1527/Tournament", "app", "app");
      Statement stmt = c.createStatement();
      ResultSet rs = stmt.executeQuery("SELECT * FROM tournaments");
      while (rs.next()) {
        out.println("<tr><td>" + rs.getString("name") + "</td>");
        out.println("<td>" + rs.getString("location") + "</td>");
        out.println("<td>" + rs.getDate("start_date") + "</td>");
        out.println("<td>" + rs.getDate("end_date") + "</td>");
        out.println("<td>" + rs.getString("sports_names") + "</td></tr>");
      }
      c.close();
    } catch (Exception e) {
      out.println(e);
    }
```

```
    %>
</table>
</body>
</html>
```

TournamentServlet.java

```java
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.annotation.*;
import javax.servlet.http.*;
import javax.servlet.ServletException;
import java.sql.*;

@WebServlet(urlPatterns = {"/TournamentServlet"})
public class TournamentServlet extends HttpServlet {
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {

        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();
        String name = request.getParameter("name");
        String location = request.getParameter("location");
        String startDate = request.getParameter("start_date");
        String endDate = request.getParameter("end_date");
        String sports_names = request.getParameter("sports_names");

        try {

            Class.forName("org.apache.derby.jdbc.ClientDriver");
            Connection
c=DriverManager.getConnection("jdbc:derby://localhost:1527/Tournament","app","app");

            PreparedStatement stmt = c.prepareStatement("INSERT INTO tournaments
(name, location, start_date, end_date, sports_names) VALUES (?, ?, ?, ?, ?)");
            stmt.setString(1, name);
            stmt.setString(2, location);
            stmt.setDate(3, Date.valueOf(startDate));
            stmt.setDate(4, Date.valueOf(endDate));
```

```java
        stmt.setString(5, sports_names);
        stmt.executeUpdate();
        c.close();
        response.sendRedirect("tournaments.jsp");
    }
    catch (Exception e) {
        out.println(e);
    }
  }
}
```

UpdateTournamentServlet.java

```java
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.annotation.*;
import javax.servlet.http.*;
import javax.servlet.ServletException;
import java.sql.*;

@WebServlet(urlPatterns = {"/UpdateTournamentServlet"})
public class UpdateTournamentServlet extends HttpServlet {
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {

        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();

        String name = request.getParameter("name");
        String location = request.getParameter("location");
        String startDate = request.getParameter("start_date");
        String endDate = request.getParameter("end_date");
        String sports_names = request.getParameter("sports_names");

        try {
            Class.forName("org.apache.derby.jdbc.ClientDriver");
            Connection connection =
DriverManager.getConnection("jdbc:derby://localhost:1527/Tournament", "app", "app");
```

```java
        PreparedStatement stmt = connection.prepareStatement("UPDATE tournaments
SET location = ?, start_date = ?, end_date = ?, sports_names = ?  WHERE name = ?");
        stmt.setString(1, location);
        stmt.setDate(2, Date.valueOf(startDate));
        stmt.setDate(3, Date.valueOf(endDate));
        stmt.setString(4, sports_names);
        stmt.setString(5, name);
        int rowsAffected = stmt.executeUpdate();
        connection.close();

        if (rowsAffected > 0) {
            response.sendRedirect("tournaments.jsp");
        } else {
            response.sendRedirect("UpdateTournament.jsp?error=Tournament not found
or no changes made");
        }
    } catch (Exception e) {
        out.println("Error: " + e.getMessage());
    }
  }
}
```

DeleteTournamentServlet.java

```java
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.annotation.*;
import javax.servlet.http.*;
import javax.servlet.ServletException;
import java.sql.*;

@WebServlet(urlPatterns = {"/DeleteTournamentServlet"})
public class DeleteTournamentServlet extends HttpServlet {
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {

        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();

        String name= request.getParameter("name");
```

```
        try {
            Class.forName("org.apache.derby.jdbc.ClientDriver");
            Connection connection =
DriverManager.getConnection("jdbc:derby://localhost:1527/Tournament", "app", "app");

            PreparedStatement stmt = connection.prepareStatement("DELETE FROM
tournaments WHERE name = ?");
            stmt.setString(1, name);
            int rowsAffected = stmt.executeUpdate();
            connection.close();

            if (rowsAffected > 0) {
                response.sendRedirect("tournaments.jsp");
            } else {
                response.sendRedirect("DeleteTournament.jsp?error=Tournament not
found");
            }
        } catch (Exception e) {
            out.println("Error: " + e.getMessage());
        }
    }
}
```

OUTPUT
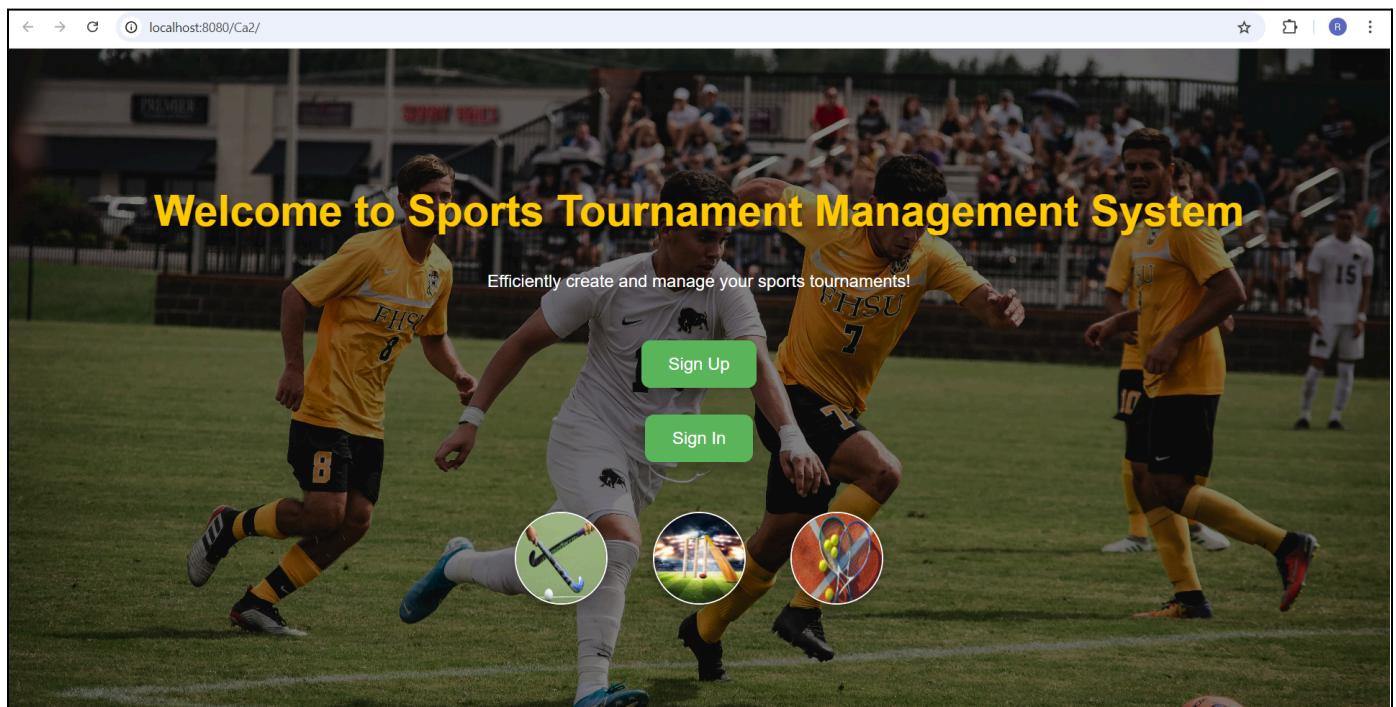
Sign Up Page:

Sign Up

Username

mehtab1

Email

mehtab@gmail.com

Password

••••••••

Confirm Password

••••••••

Sign Up

Already have an account? Sign In here.

Sign In Page:

Sign In

Username:

mehtab1

Password:

•••••••

Log In

Dashboard Page:

Admin Dashboard

Create Tournament   Update Tournament   Delete Tournament   View Tournaments

Create Tournament:

Create Tournament

Tournament Name:

Grand Games

Location:

Hyderabad

Start Date:

28 - 09 - 2024

End Date:

29 - 09 - 2024

Sports Names:

Chess, Ludo, Snakes and Ladder

Create Tournament

Back to Tournaments

---

localhost:8080/Ca2/tournaments.jsp

List of Tournaments

ID	Name	Location	Start Date	End Date	
UFC Champions	Mumbai	2024-09-22	2024-09-29	Hockey, Football, Tennis
Grand Games	Hyderabad	2024-09-28	2024-09-29	Chess, Ludo, Snakes and Ladder

Update Tournament Page:

Update Tournament

Tournament Name:

Grand Games

Location:

Mumbai

Start Date:

28-09-2024

End Date:

29-09-2024

Sports Names:

Carrom, Ludo

Update Tournament

Back to Tournaments

List of Tournaments

ID	Name	Location	Start Date	End Date	
	UFC Champions	Mumbai	2024-09-22	2024-09-29	Hockey, Football, Tennis
	Grand Games	Mumbai	2024-09-28	2024-09-29	Carrom, Ludo

Delete Tournament Page:

Delete Tournament

Tournament Name:

Grand Games

Delete Tournament

Back to Tournaments

View Tournaments Page:

List of Tournaments

ID	Name	Location	Start Date	End Date	
UFC Champions	Mumbai	2024-09-22	2024-09-29	Hockey, Football, Tennis	

CONCLUSION

The Sports Tournament Management System successfully simplifies the process of organizing sports tournaments by providing a web-based solution that includes user authentication, tournament creation, updates, and detailed viewing. With its intuitive interface, administrators can efficiently manage tournaments, ensuring that all relevant details are easily accessible and modifiable. The use of Java Servlets, JSP, and Apache Derby provides a solid foundation for a scalable and secure management system, making it an ideal tool for sports organizations.