Submission via Moodle (Virtual Campus)
Total: 100% (Application of High-Level Bloom's Taxonomy)

Week 4: Session Tracking & Inter-Servlet Communication (20%)

Task:
Build a simple web application demonstrating session tracking using both Cookies and HTTP Sessions. The application should:

- Create and store user details (username and role) using cookies upon login (10%).
- Track and display user-specific data (e.g., user preferences) using HTTP sessions (10%).

Requirements:

- Implement servlets for setting and retrieving cookie data.
- Use session management to store and retrieve user-specific data across different pages.
- Demonstrate inter-servlet communication by forwarding requests between servlets.

Week 5 & 6: JDBC Database Integration & Stored Procedures (30%)

Task 1 (15%): Database Integration

Create a Java program that:

- Connects to a MySQL database.
- Inserts, updates, and retrieves records from a database table (e.g., Books table with columns for Book ID, Title, and Author).
- Use PreparedStatement to ensure data safety and prevent SQL injection.

Task 2 (15%): Using Stored Procedures

- Write a stored procedure that accepts a Book ID as input and retrieves the corresponding book details.
- Create a Java program using CallableStatement to call this stored procedure and display the book details.

Requirements:

- Demonstrate proper error handling and resource management.
- Use comments to explain each major step.

Week 7: JavaBeans (25%)

Task:

Design a JavaBean to represent a simple user profile with properties such as name, email, and age. The JavaBean must:

- Follow JavaBean conventions with private fields, public getter/setter methods, and a no-argument constructor (10%).

- Include an event handling feature using PropertyChangeSupport to detect changes in the email and notify listeners (15%).

Requirements:

- Create a test class to demonstrate the use of your JavaBean, including updating properties and handling events.
- Provide clear and concise documentation/comments.

Week 8: Advanced JavaBeans - Properties & Event Handling (25%)

Task:

Develop a complex JavaBean representing a Product with properties like productName, price, and quantity. The JavaBean must:

- Support both simple and bound properties using PropertyChangeSupport (15%).
- Implement event handling to notify changes in the price and quantity properties (10%).

Requirements:

- Demonstrate property change listeners that respond to changes in these properties.
- Create a test program that updates the properties and displays change notifications.

Submission Guidelines:

1. Submit all Java source files, database scripts, and a README document explaining how to run your project.
2. Ensure all code follows best practices and is properly commented for clarity.
3. Late submissions will be penalized as per course policy.