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Name of the laboratory:Web Technologies lab

Obectives of the lab:

- To enable the students to program web applications using the following technologies HTML, Javascript , AJAX, PHP, Tomcat Server, Servlets, JSP.
- To develop an ability to design and implement static and dynamic website Choose best technologies for solving web client/server problems.
- Create conforming web pages.
- Use JavaScript for dynamic effects.
- To prepare PHP scripts.
- Use JavaScript.
- & PHP to validate form input entry Understand, analyze and create XML documents and XML Schema.
- Understand, analyze and build web applications using PHP.
- Use appropriate client-side or Server-side applications.
- Handling Cookies and Sessions using PHP, SERVLETS and JSP.
- Manage normal and abnormal interactions with databases using JDBC.

List of the experiments:

1. Install the following on the local machine
   - Apache Web Server (if not installed)
   - Tomcat Application Server locally
   - Install MySQL (if not installed)
   - Install PHP and configure it to work with Apache web server and MySQL (if not already configured)

2. Write an HTML page including javascript that takes a given set of integer numbers and shows them after sorting in descending order.

3. Write an HTML page including any required Javascript that takes a number from one text field in the range of 0 to 999 and shows it in another text field in words. If the number is out of range, it should show “out of range” and if it is not a number, it should show “not a number” message in the result box.

4. Write an HTML page that has one input, which can take multi-line text and a submit button. Once the user clicks the submit button, it should show the number of characters, words and lines in the text entered using an alert message. Words are separated with white space and lines are separated with new line character.

5. Write an HTML page that contains a selection box with a list of 5 countries. When the user selects a country, its capital should be printed next to the list. Add CSS to customize the properties of the font of the capital (color, bold and font size).

6. Create an XML document that contains 10 users information. Write a Java program, which takes User Id as input and returns the user details by taking the user information from the XML document using (a) DOM Parser and (b) SAX parser

Implement the following web applications using (a) PHP, (b) Servlets and (c) JSP:

7. A user validation web application, where the user submits the login name and password to the server. The name and password are checked against the data already available in Database and if the data matches, a successful login page is returned. Otherwise a failure message is shown to the user.
8. Modify the above program to use an xml file instead of database.

9. Modify the above program to use AJAX to show the result on the same page below the submit button.

10. A simple calculator web application that takes two numbers and an operator (+, -, /, * and %) from an HTML page and returns the result page with the operation performed on the operands.

11. Modify the above program such that it stores each query in a database and checks the database first for the result. If the query is already available in the DB, it returns the value that was previously computed (from DB) or it computes the result and returns it after storing the new query and result in DB.

12. A web application takes a name as input and on submit it shows a hello <name> page where <name> is taken from the request. It shows the start time at the right top corner of the page and provides a logout button. On clicking this button, it should show a logout page with Thank You <name> message with the duration of usage (hint: Use session to store name and time).

13. A web application that takes name and age from an HTML page. If the age is less than 18, it should send a page with "Hello <name>, you are not authorized to visit this site" message, where <name> should be replaced with the entered name. Otherwise it should send "Welcome <name> to this site" message.

14. A web application for implementation:

    The user is first served a login page which takes user's name and password. After submitting the details the server checks these values against the data from a database and takes the following decisions.

    If name and password matches, serves a welcome page with user's full name.

    If name matches and password doesn't match, then serves "password mismatch" page

    If name is not found in the database, serves a registration page, where user's full name is asked and on submitting the full name, it stores, the login name, password and full name in the database (hint: use session for storing the submitted login name and password)

15. A web application that lists all cookies stored in the browser on clicking "List Cookies" button. Add cookies if necessary.