Lab Manual

Web Engineering (Pr): COT-412

Web Engineering
COT 402

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1. Information Architecture
The Role of the Information Architect, Collaboration and Communication, Organizing Information, Organizational Challenges, Organizing Web Sites and Intranets, Designing Navigation Systems, Types of Navigation Systems, Integrated Navigation Elements, Remote Navigation Elements, Designing Elegant Navigation Systems, Grouping Content, Conceptual Design.

2. Dynamic HTML and Web Designing

HTML Basic Concepts, Good Web Design, Process of Web Publishing, Phases of Web Site development, Structure of HTML documents, HTML Elements – Core attributes, Language attributes, Core Events, Block Level Events, Text Level Events, Linking Basics, Linking in HTML, Images and Anchors, Anchor Attributes, Image Maps, Image Preliminaries, Images as Buttons, Introduction to Layout: Backgrounds, Colors and Text, Fonts, Layout with Tables. Advanced Layout: Frames and Layers, HTML and other media types. Audio Support in Browsers, Video Support, Other binary Formats. Style Sheets, Positioning with Style sheets. Basic Interactivity and HTML: FORMS, Form Control, New and emerging Form Elements.

3. CGI using PERL

Introduction to CGI, Alternative Technologies, The Hypertext Transport Protocol, URLs, HTTP, Browser Requests, Server Responses, Proxies, Content Negotiation, The Common Gateway Interface, The CGI Environment, Environment Variables, CGI Output, Forms and CGI, Sending Data to the Server,

4. Java Server Pages

Basics, Integrating Scripts in JSPs, JSP Objects and Components, configuring and troubleshooting, JSP: Request and response objects, Retrieving the contents of a an HTML form, Retrieving a Query String, Working with Beans, Cookies, Creating and Reading Cookies.
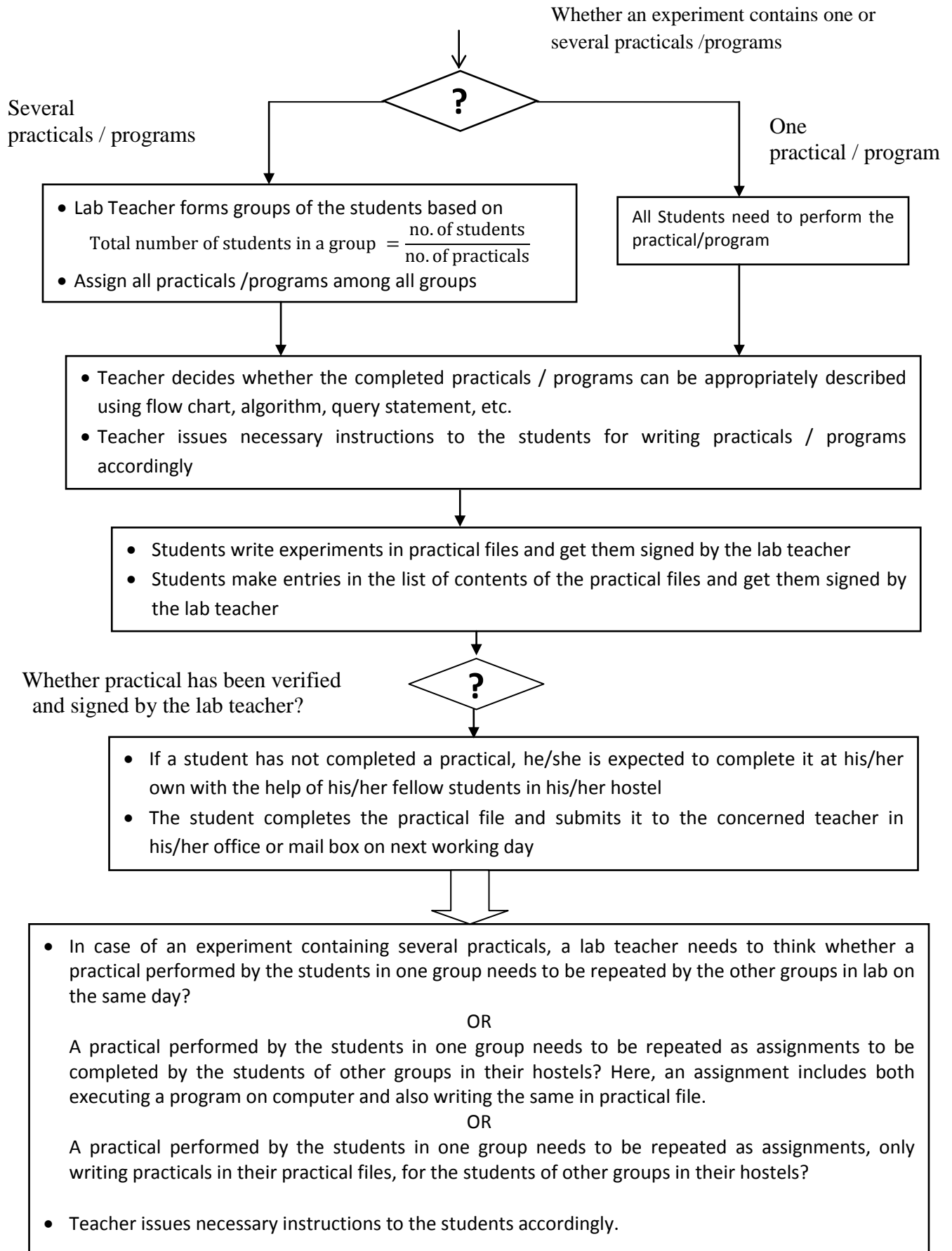
5. XML

Relationship between HTML, SGML and XML, Basic XML, Valid Documents, Ways to use XML, XML for Data Files, Embedding XML into HTML documents, Converting XML to HTML for DISPLAY, Displaying XML using CSS and XSL, Rewriting HTML as XML, The future of XML.

Note:- At least one question will be set from each unit.

BOOKS
1.   Thomas A Powell, HTML The Complete Reference, Tata McGraw Hill Publications.
2.   Scott Guelich, Shishir Gundavaram, Gunther Birzniek; CGI Programming with Perl 2/e, O'Reilly
3.   Pardi, XML in Action, Web Technology, PHI.
4.   Yong, XML Step by Step, PHI.

Lab Instructions

Whether an experiment contains one or several practicals /programs

?

Several practicals / programs

One practical / program

- Lab Teacher forms groups of the students based on

$$\text{Total number of students in a group } = \frac{\text{no. of students}}{\text{no. of practicals}}$$

- Assign all practicals /programs among all groups

All Students need to perform the practical/program

- Teacher decides whether the completed practicals / programs can be appropriately described using flow chart, algorithm, query statement, etc.
- Teacher issues necessary instructions to the students for writing practicals / programs accordingly

- Students write experiments in practical files and get them signed by the lab teacher
- Students make entries in the list of contents of the practical files and get them signed by the lab teacher

Whether practical has been verified and signed by the lab teacher?

?

- If a student has not completed a practical, he/she is expected to complete it at his/her own with the help of his/her fellow students in his/her hostel
- The student completes the practical file and submits it to the concerned teacher in his/her office or mail box on next working day

- In case of an experiment containing several practicals, a lab teacher needs to think whether a practical performed by the students in one group needs to be repeated by the other groups in lab on the same day?

OR

A practical performed by the students in one group needs to be repeated as assignments to be completed by the students of other groups in their hostels? Here, an assignment includes both executing a program on computer and also writing the same in practical file.

OR

A practical performed by the students in one group needs to be repeated as assignments, only writing practicals in their practical files, for the students of other groups in their hostels?

- Teacher issues necessary instructions to the students accordingly.

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L T P   Practical exam: 40

-   - 3   Sessional: 60

Experiment 1 (Home Page Design)

I. Design a home page which will display your information, i.e. Bio data, using Image Link and File Link to upload images and necessary documents.

Experiment 2 (Image map and Hot spots)

I. Create a HTML web page with the following:
   i) To embed an image map in a web page
   ii) To fix the hot spots
   iii) Show all the related information when the hot spots are
      clicked.

Experiment 3 (Cookies)

I. Creating and reading cookies using java script/ASP/JSP.

Experiment 4 (Signup Form)

I. Design a Signup form with validation using HTML.

Experiment 5 (HTML Tags)

I. Create a webpage with HTML describing your department. Use paragraph and list tags.

II. Apply various colors to suitably distinguish key words. Also apply font styling like italics, underline and two other fonts to words you find appropriate. Also use header tags.

III. Create links on the words e.g. "Wi-Fi" and "LAN" to link them to Wikipedia pages.

IV. Insert an image and create a link such that clicking on image takes user to other page.

V. Change the background color of the page. At the bottom create a link to take user to the top of the page.

Experiment 6 (Table Formating)

I. Design a timetable and display it in tabular format.
II. Design a mark sheet and display all your marks with subjects in a tabular format.
III. Create a table to show your class time-table.
IV. Design a webpage to List a table of content and navigate within the pages.

Experiment 7 (Programming)

I. Write a program for user defined function to get array of values and sort them in ascending order.

II. Write a program to demonstrate Event Handling
   -Validation of registration form
   -Open a Window from the current window
   -Change color of background at each click of button or refresh of a page
   -Display calendar for the month and year selected from combo box OnMouseover event

III. Write a program to Demonstrate Array Objects and Date Object's predefined methods.
IV. Write a program for Calendar Creation : Display all months.
V. Write a program to Demonstrate Exception Handling.

Experiment 8 (JavaScript)

I. Using javascript demonstrate Nested loop.

II. Validate the Registration, user login, user profile and payment by credit card pages using JavaScript.

III. Develop and demonstrate a XHTML file that includes JavaScript that uses functions for the following problems:
   a) Parameter: A string
      Output: The position in the string of the left-most vowel.
   b) Parameter: A number
      Output: The number with its digits in the reverse order.

IV. Using javascript demonstrate fade from one color to another on load.

V. Develop and demonstrate a XHTML file that includes Javascript script for the following problems:

a) Input: A number n obtained using prompt.
   Output: The first n Fibonacci numbers.
 b) Input: A number n obtained using prompt.
   Output: A table of numbers from 1 to n and their squares using alert.

Experiment 9 (CSS)

I.   Design a CSS to create menu.

II.   Design a webpage i.e. Bio data using CSS.

III.   WAP to create table and list using CSS.

IV.   To create a web page that displays college information using various Style sheets.

V.   Write a program to Use different font, styles: In the style definition you define how each selector should work (font, color etc.).
Then, in the body of your pages, you refer to these selectors to activate the styles.

Experiment 10 (JavaScript in HTML)

I.   Embedding javascript in HTML pages.

II.   Design a registration form and validate its field by using javascript.

III.   To design the scientific calculator and make event for each button using javascript.

IV.   WAP to create popup boxes in javascript.

V.   Program to create a class calculator that contains an overloaded method called "add" to calculate the sum of two integers, two float numbers and, one integer and one float.

Experiment 11 (VBScript)

I. Generate Date and Time using VBScript.

II. Demonstrate *for* Loop (Fibonacci series program in VBScript).

III. VBScript Validation Program

IV. Demonstrate *While* Loop (Fibonacci series program in VBScript).

V. Create any catalog using XML.

Experiment 12 (JSP and ASP)

I. Implement the "Hello world!" program using JSP struts Framework.

II. Write programs in Java to create applets.

III. Write programs in Java to create applets incorporating the following features:
   -Create a color palette with matrix of buttons
   -Set background and foreground of the control text area by selecting a color from color palette.
   -In order to select Foreground or background use check box control as radio buttons.

IV. Write a program for database Connection to display all the values in the table (ASP).