

CASE TOOLS AND WEB TECHNOLOGIES LAB

III B. Tech. - I Semester
Course Code: A3CS23

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CASE TOOLS LAB:

COURSE OBJECTIVES:

1. To describe the object-oriented software development process, including object-oriented methodologies and work flow
2. To familiarize various UML diagrams like class, object, interaction, collaboration, sequence and activity diagrams.

COURSE OUTCOMES:

1. Use software's to design an application using Object Oriented approach
2. Apply suitable design patterns in system design
3. Critique Object Oriented analysis and system design using Object Oriented Principles

OBJECT ORIENTED ANALYSIS (UML) LAB EXPERIMENTS:

Case studies given below should be Modelled using Rational Rose tool in different views i.e. Use case diagram, Class diagram, Sequence Diagram, Collaboration Diagram, State Diagram, Activity Diagram, Component Diagram, Deployment Diagram.

WEEK 1:

CASE STUDY 1:

LIBRARY INFORMATION SYSTEM:

A library lends books and magazines to members, who are registered in the system. Also it handles the purchase of new titles for the library. Popular titles are bought in multiple copies. A member can reserve a book or magazine that is not currently available in the library, so that when it is returned by the library that person is notified. The library can easily create, update and delete information about the titles, members, loans and reservations in the systems.

CASE STUDY 2:

A HOSPITAL MANAGEMENT SYSTEM:

Entry in the hospital management system is done through system users. Master form for users is used to create user profile. Whole system is display in user's selected language. For example if user knows Germany then whole hospital management system is display in German language after login. Above all modules are related to patient. So when patient is admit then patient information is enter from patient entry form like patient name, patient initial, patient sex, patient birth date, blood group, patient ID.

WEEK 2:

CASE STUDY 3:

AUTOMATED TELLER MACHINE (ATM):

Software is designed for supporting a computerized ATM banking network. All the process involved in the bank is computerized these days. All the accounts maintained in the bank and also the transactions effected, including ATM transactions are to be processed by the computers in the bank. An ATM accepts a relevant cash card, interacts with user, communicates with the central system to carry out the transaction, dispenses cash, and prints receipts. The system to be designed and implemented must include appropriate record keeping and security provisions. The system must handle concurrent access to the same account.

CASE STUDY 4:

ONLINE TICKET RESERVATION FOR RAILWAYS:

Computer play an integral part of the day in today's life. It makes the entire job easier and faster, every job is computerized so as the ticket reservation we can book over the online ticket reservation system. During the booking of the ticket reservation passenger has to select origin, date of journey,

destination, class of train etc. The reservation counter keeps track of passenger's information. Thus the system will have all the details about the trains and facilities provided by them. There are various trains with the different level of convenience for the passengers. The whole database will be maintained by database administrator. There are varieties of trains where the passengers can select the train according to the convenience for their destination journey. The journey could be within the state or across the India. Each train has the three types of classes i.e. Sleeper class, First class and the AC compartment. Design the application for the above problem description.

WEEK 3:

**CASE STUDY 5:
RECRUITMENT PROCEDURE FOR SOFTWARE INDUSTRY:**

In the software industry the recruitment procedure is the basic thing that goes in the hand with the requirement as specified by the technical management team. HR first gives an advertisement in leading Newspapers, Journals, Weeklies and Websites. The job seekers can apply for it through by Post or by e-mail to the company.

The technical skill and the experience of the candidates are reviewed and the short listed candidates are called for the interview.

There may be different rounds for interview like the written test, technical interview, and HR interview. After the successful completion of all rounds of interview, the selected candidates' names are displayed. Meanwhile HR gives all the details about the salary, working hours, terms and conditions and the retirement benefit to the candidate.

**CASE STUDY 6:
DESIGN A STUDENT REGISTRATION SYSTEM :**

Each student has access to his or her course and grade information only and must be authenticated prior to viewing or updating the information. A course instructor will use the system to view the list of courses he or she is assigned for a given semester or has taught previously, view the list of students registered for the course(s) he or she is teaching and record final grades for each student in the course(s). TA assignments will also be viewable through this system. Instructors must also be authenticated prior to viewing or updating any information.

WEEK 4:

**CASE STUDY 7:
ONLINE AUCTION SALES:**

The online auction system is a design about a website where sellers collect and prepare a list of items they want to sell and place it on the website for visualizing. To accomplish this purpose the user has to access the site. In case it's a new user he has to register. Purchaser's login and select items they want to buy and keep bidding for it. Interacting with the purchasers and sellers through messages does this. There is no need for customer to interact with the sellers because every time the purchasers bid, the details will be updated in the database. The purchaser making the highest bid for an item before the close of the auction is declared as the owner of the item. If the auctioneer or the purchaser doesn't want to bid for the product then there is fixed cut-off price mentioned for every product. He can pay that amount directly and own the product. The purchaser gets a confirmation of his purchase as an acknowledgement from the website. After the transition by going back to the main menu where he can view other items.

WEB TECHNOLOGIES LAB:

COURSE OBJECTIVES:

1. Choose best technologies for solving web client/server problems
2. Create conforming web pages, Use JavaScript for dynamic effects
3. Use Javascript to validate form input entry, Use appropriate client-side or Server-side applications, Create adaptive web pages, and Implement cookies
4. Deploy Java Applets and Servlets, Create an XML application

COURSE OUTCOMES:

Upon completion of this course, students should be able to:

1. Use LAMP stack for web applications.
2. Use Tomcat Server for servlets for JSP's.
3. Write simple applications with Technologies like HTML, Javascript, AJAX, PHP, Servlets and JSPs.
4. Connect to databases and get results.
5. Parse XML files using Java(DOM and SAX parsers).

NOTE:

Use WAMP Stack(Linux,Apache,MySQL and PHP)for the Lab Experiments. Though not mandatory, encourage the use of Eclipse platform wherever applicable.

The list suggests the minimum program set. Hence, the concerned staff is requested to add more problems to the list as needed.

WEEK 5:

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)

WEEK 6:

Write an HTML page including any required JAVA script 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.

WEEK 7:

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.

WEEK 8:

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).

WEEK 9:

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 Parserand (b)SAX parser.

WEEK 10:

Implement the following web application using PHP

1. A user validation web application, where the user submits the login name and password to the server .The name and password to the server. The name and password are checked

against the data already available in the Database and if the data matches, a successful login page is returned. Otherwise a failure message is shown to the user.

2. Modify the above program to use XML file instead of database.
3. Modify the above program to use AJAX to show the result on the same page below the submit button.

WEEK 11:

Implement the following web application using Servlets and (c)JSP.

1. 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.
2. 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 previously computed(from DB) or it computes the result and returns it after storing the new query and result in DB.
3. 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 right top corner of the page and provides a logout button. On clicking this button, it should show a message with the duration of usage(hint: Use session to store name and time).

WEEK 12:

Implement the following web application using JSP

1. 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.
2. 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 and password does not match ,then serves" password mismatch" page. If a name is not found in 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 and password).
3. A web application that lists all cookies stored in the browser on clicking "list cookies" button. Add cookies if necessary.

TEXT BOOKS:

1. Web Technologies, Uttam K Roy, Oxford University Press.
2. The Complete Reference PHP-Steven Holzner, Tata MCGraw-Hill.

REFERENCE BOOKS:

1. Web Programming, building internet applications, Chris Bates 2nd edition, Wiley Dreamtech.
2. Java Server Pages-Hans Bergsten,SPD O'Reilly.
3. Java Script,D.Flanagan,O'Reilly,SPD.
4. Beginning web programming –Jon Duckett WROX.
5. Programming world wide web,R.W Sebesta,Fourth Edition,Person.
6. Internet and World Wide Web –How to program ,Deitel and Nieto,Pearson.