III Year B.Tech. CSE – II Sem
WEB TECHNOLOGIES & CASE TOOLS LAB

Part – A: Web Technologies

Objectives:
To enable the students to program web applications using the following technologies: HTML, JavaScript, AJAX, PHP, Tomcat server, Servlets and JSP.

Week1:
   a) 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 words. If 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.
   b) 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 spaces and lines are separated with new line character.

Week 2:
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 3:
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 (b) SAX parser

Week 4:
Implement the following web application using PHP
   i.   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.
   ii.   Modify above program to use an xml file instead of database.
   iii.   Modify the above program to use AJAX to show the result on the same page below submit button.
   iv.   A sample calculator web application that takes two numbers and an operator(+,-,*,/,%) from an HTML page and returns the result page with the operation performed on the operands.
   v.   Modify the above program such that it stores each query in the database and checks the database first for the result. If the query is already available in the Debit 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.
   vi.   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 provide logout button. On clicking 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)
   vii.   A web application that takes name and age from the 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.
   viii. 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 the data base 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).
   ix.   A web application that lists all cookies stored in the browser on clicking "list cookies "button. Add cookies if necessary.

Week 5:
Implement the week 4 web applications using servlets

Week 6: Implement the Week 4 web application using JSP

Part – B: Case Tools lab

Objectives:
- Understand how UML supports the entire OOAD process
- Become familiar with all phases of OOAD.
- Understand different software testing tools and their features.

1. Student are divided into batches of 5 each and each batch has to draw the following diagrams using UML for an ATM systems whose description is given below:
   UML diagrams to be developed are
   1. Use case diagram
   2. Class diagram
   3. Sequence diagram
   4. Collaboration diagram
   5. State diagram
   6. Activity diagram
   7. Component diagram
   8. Deployment diagram

Description of an ATM system

The software to be designed will control a simulated Automated Teller Machine (ATM) having magnetic stripe reader for reading an ATM card, a customer console (Keyboard and Display) for interaction with the customer, a slot for depositing envelopes, a dispenser for cash(in multiples of Rs 100, Rs 500 and Rs 1000) a printer for printing customer receipts and Key operated switch to allow an operator to start or stop the machine. The ATM will communicate with the banks over an appropriate a communication link (the software on the latter is not part of the requirements for this problem).

The ATM will service one customer at a time. A customer will be required to insert an ATM card and enter a personal identification number (PIN) - both of which will be sent to the bank for validation as part of each transaction. The customer will then be able to perform one or more transactions. The card will be retained in the machine until the customer indicates that he/she desires no further transactions, at which point it will be returned – except as noted below.

The ATM must be able to provide the following services to the customer:
1. A customer must be able to make a cash withdrawal from any suitable account linked to the card, in multiples of Rs 100, Rs 500 and Rs 1000. Approval must be obtained from the bank before the cash is dispensed.
2. A customer must be able to make the deposit to any account linked to the card, consisting of cash and/or checks in an envelope. The customer will enter the amount of the deposit into the ATM, subject to manual verification when the envelope is removed from the machine by an operator. Approval must be obtained from the bank before physically accepting the envelope.
3. A customer must be able to make a transfer of money between any two accounts linked to the card.
4. A customer must be able to make a balance enquiry of any account linked to the card.
5. A customer must be able to abort a transaction in progress by pressing the cancel key instead of responding to a request from the machine.

The ATM will communicate each transaction to the bank and obtain verification that it was allowed by the bank. Ordinarily, a transaction will be considered complete by the bank once it has been approved. In the case of a deposit a second message will be sent to the bank indicating that the customer has deposited the envelope(if the customer fails to deposit the envelop within the timeout period, or pressed cancel instead, no second message will be sent to the bank and the deposit will not be credited to the customer).

If the bank determines that the customer's PIN is invalid, the customer will be required to re-enter the PIN before a transaction can proceed. The customer is unable to successfully enter the PIN after three trails, the card will be permanently retained by the machine, and the customer will have to contact the bank to get it back.

If a transaction fails for any reason other than an invalid PIN, the ATM will display an explanation of the problem, and will then ask the customer whether he/she wants to do another transaction.

The ATM will provide the customer with a printed receipt for each successful transaction.

The ATM will have a key operated switch that will allow an operator to start and stop the servicing of customers. After turning the switch to the ON position the operator will be required to verify and enter the total cash on hand. The machine can only be turned OFF when it is not servicing a customer. When the switch is moved to OFF position, the machine will shut down so that the operator may remove deposit envelopes and reload the machine with cash, blank receipts etc.