

M2-R4: INTERNET TECHNOLOGY AND WEB DESIGN

Objective of the Course

The aim of this course is to provide you the conceptual and technological developments in the field of Internet and web designing with the emphasis on comprehensive knowledge of Internet, its applications and the TCP/IP protocols widely deployed to provide Internet connective worldwide. The World Wide Web with its widespread usefulness has become an integral part of the Internet. Therefore, this course also puts emphasis on basic concepts of web design.

At the end of the course the students will be able to: -

- Review the current topics in Web & Internet technologies.
- Describe the basic concepts for network implementation.
- Learn the basic working scheme of the Internet and World Wide Web.
- Understand fundamental tools and technologies for web design.
- Comprehend the technologies for Hypertext Mark-up Language (HTML).
- Specify design rules in constructing web pages and sites.
- Effectively deal with programming issues relating to VB Script, JavaScript, Java, ASP, Front Page and Flash.
- Figure out the various security hazards on the Internet and need of security measures.

Outline of Course

S. No.	Topic	Minimum number of hours
1.	Introduction to Internet	02
2.	TCP/IP – Internet Technology and Protocol	03
3.	Internet Connectivity	03
4.	Internet Network	04
5.	Services on Internet (Definition and Functions)	04
6.	Electronic Mail	07
7.	Current Trends on Internet	03
8.	Web Publishing and Browsing	10
9.	HTML Programming Basics	12
10.	Interactivity Tools	08
11.	Internet Security Management Concepts, Information Privacy and Copyright Issues	04
	Lectures	= 60
	Practical/tutorials	= 60
	Total	= 120

Detailed Syllabus

1. Introduction to Internet

02 Hrs.

Internet, Growth of Internet, Owners of the Internet, Anatomy of Internet, ARPANET and Internet history of the World Wide Web, basic Internet Terminology, Net etiquette. Internet Applications – Commerce on the Internet, Governance on the Internet, Impact of Internet on Society – Crime on/through the Internet.

2. TCP/IP – Internet Technology and Protocol **03 Hrs.**

Packet switching technology, Internet Protocols: TCP/IP, Router, Internet Addressing Scheme: Machine Addressing (IP address), E-mail Addresses, Resources Addresses

3. Internet Connectivity **03 Hrs.**

Connectivity types: level one, level two and level three connectivity, Setting up a connection: hardware requirement, selection of a modem, software requirement, modem configuration, Internet accounts by ISP: Telephone line options, Protocol options, Service options, Telephone line options – Dialup connections through the telephone system, dedicated connections through the telephone system, ISDN, Protocol options – Shell, SLIP, PPP, Service options – E-mail, WWW, News Firewall etc.

4. Internet Network **04 Hrs.**

Network definition, Common terminologies: LAN, WAN, Node, Host, Workstation, bandwidth, Interoperability, Network administrator, network security, Network Components: Servers, Clients, Communication Media, Types of network: Peer to Peer, Clients Server, Addressing in Internet: DNS, Domain Name and their organization, understanding the Internet Protocol Address. Network topologies: Bust, star and ring, Ethernet, FDDI, ATM and Intranet.

5. Services on Internet (Definition and Functions) **04 Hrs.**

E-mail, WWW, Telnet, FTP, IRC and Search Engine

6. Electronic Mail **07 Hrs.**

Email Networks and Servers, Email protocols –SMTP, POP3, IMAp4, MIME6, Structure of an Email – Email Address, Email Header, Body and Attachments, Email Clients: Netscape mail Clients, Outlook Express, Web based E-mail. Email encryption- Address Book, Signature File.

7. Current Trends on Internet **03 Hrs.**

Languages, Internet Phone, Internet Video, collaborative computing, e-commerce.

8. Web Publishing and Browsing **10 Hrs.**

Overview, SGML, Web hosting, HTML. CGL, Documents Interchange Standards, Components of Web Publishing, Document management, Web Page Design Consideration and Principles, **Search and Meta Search Engines**, WWW, Browser, HTTP, Publishing Tools

9. HTML Programming Basics **12 Hrs.**

HTML page structure, HTML Text, HTML links, HTML document tables, HTML Frames, HTML Images, multimedia

10. Interactivity Tools **08 Hrs.**

ASP, VB Script, JAVA Script, JAVA and Front Page, Flash

11. Internet Security Management Concepts, Information Privacy and Copyright Issues
04 Hrs.

Overview of Internet Security, Firewalls, Internet Security, Management Concepts and Information Privacy and Copyright Issues, basics of asymmetric cryptosystems.

RECOMMENDED BOOKS

MAIN READING

1. Greenlaw R and Hepp E “Fundamentals of Internet and www” 2nd EL, Tata McGrawHill,2007.
2. Ivan Bayross, “HTML, DHTML, JavaScript, Perl CGI”, 3rd Edition, BPB Publications.
3. D. Comer, “The Internet Book”, Pearson Education, 2009.

SUPPLEMENTARY READING

1. M. L. Young, “The Complete reference to Internet”, Tata McGraw Hill, 2007.
2. Godbole AS & Kahate A, “Web Technologies”, Tata McGrawHill,2008.
3. Jackson, “Web Technologies”, Pearson Education, 2008.
4. B. Patel & Lal B. Barik, ” Internet & Web Technology “, Acme Learning Publishers
5. Leon and Leon, “Internet for Everyone”, Vikas Publishing House.

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Model Question Paper

NOTE:

1. There are **TWO PARTS** in this Module/Paper. **PART ONE** contains **FOUR** questions and **PART TWO** contains **FIVE** questions.
2. **PART ONE** is to be answered in the **TEAR-OFF ANSWER SHEET** only, attached to the question paper, as per the instructions contained therein. **PART ONE** is **NOT** to be answered in the answer book.
3. Maximum time allotted for **PART ONE** is **ONE HOUR**. Answer book for **PART TWO** will be supplied at the table when the answer sheet for **PART ONE** is returned. However, candidates, who complete **PART ONE** earlier than one hour, can collect the answer book for **PART TWO** immediately after handing over the answer sheet for **PART ONE**.

TOTAL TIME: 3 HOURS

TOTAL MARKS: 100
(PART ONE: 40; PART TWO: 60)

PART ONE

(Answer all the questions; each question carries ONE mark)

1. **Each question below gives a multiple choices of answers. Choose the most appropriate one.**
 - 1.1. Which type of network is most likely confined to a building or a campus
 - a) Local area
 - b) Metropolitan area
 - c) Wide area
 - d) Departmental
 - 1.2. Which programming language always makes platforms-independent application
 - a) Java
 - b) Visual basic
 - c) C++
 - d) C
 - 1.3. Which best describes support over serial line communication under the TCP/IP Protocol .
 - a) SLIP
 - b) PPP
 - c) Both A,B
 - d) None
 - 1.4. If a group of network computers connect to a central hub the network has what type of Physical Topology
 - a) Ring
 - b) Star
 - c) Bus
 - d) None

- 1.5. If a group of computer connected to a central concentrator the network has what type of logical topology?
- Ring.
 - Sart
 - Bus
 - INone
- 1.6. The transport layer protocol is
- ALP
 - PPX
 - TCP
 - None
- 1.7. The UDP is part of the which protocol suite
- TCP/IP
 - IPX/SPX
 - Apple Talk
 - NetBEUI
- 1.8. JDK (Java Development Kit) include .
- Java
 - Javac
 - JDB
 - All
- 1.9. Buffer over flow attacks means
- Collect and relay some data
 - Get full system access
 - Play and display advertisement
 - Slow down system
- 1.10. A firewall can be
- A Hardware
 - A Software
 - Both software and Hardware
 - Network Engine

2. Each statement below is either TRUE or FALSE. Identify and mark them accordingly in the answer book.

- 2.1. The Word Wide Web is a very large set of interlinked hypertext documents accessed viahe Internet.
- 2.2. World Wide Web is synonymous with Internet.
- 2.3. Packet switching is a network communications method that does not groups all Transmitted data, irrespective of content, type, or structure into suitably-sized blocks, called packets
- 2.4. The ARPANET computer network made a large contribution to the development of the e-mail.

- 2.5. SMTP is the push protocol that can not pull information from a remote server on demand.
- 2.6. Disaster recovery is the recovery of documents in case of destruction from fires, floods earthquake etc.
- 2.7. Streams can not controlled the flow of data from one source to another
- 2.8. The TCP/IP is slower then NetBEUI
- 2.9. A user level access is less secure then share level access
- 2.10. The ability of the new object to implement the base functionality of the parent object in new way is called inheritance

3. Match words and phrases in column X with the nearest in meaning in column Y.

- | X | Y |
|---|---------------------|
| 3.1 server would constantly send new data to the client through the initial connection, that remains open | a) Spoofing |
| 3.2 A kind of forgery, mail assume to be send from know person but actually they are not | b) SGML |
| 3.3 It is an application-layer Internet standard protocol used by local e-mail clients to retrieve e-mail from a remote server over a TCP/IP connection | c) Drug trafficking |
| 3.4 It is an ISO Standard metalanguage in which one can define markup languages for documents .. | d) Web server push |
| 3.5 The ability of a system or product to work with other system or product without much efforts | e) Web designing |
| 3.6 Encoding data to make them unintelligible to unauthorized persons | f) Thread |
| 3.7 use of Internet to sell their illegal substances through encrypted e-mail and other Internet Technology | g) Interoperability |
| 3.8 Skill of designing hypertext presentation of Content delivered to end user | h) Class Diagram |
| 3.9 It can be divided into linear and non linear technique categories | i) Scope |
| 3.10 A single path of execution that is a sub process of the main process | j) POP3 |
| | k) Encryption |
| | l) Multimedia |
| | m) nesting |

4. Fill in the blanks in 4.1 to 4.10 below, by choosing appropriate words and phrases given in the list below :

(a) Cache	(b) URL	(c) Cyberterrorism	(d) metadata, integration
(e) IMAP4	(f) enterprise data modeling outer jain	(g)Header,Body	(h) CASCADE
(i) Interleaved main memory	(j) Virtual memory	(k) bus	(l) website

(m) Applet			
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- 4.1. Viewing a Web page on the World Wide Web normally begins by typing the _____ of the page into a Web browser.
- 4.2. Web page data may need not to be re-obtained from the source Web server. Almost all Web browsers _____ the recently obtained data on the local hard disk
- 4.3. The internet e-mail message consist of two major section that are _____ and _____
- 4.4. _____ is one of the two most prevalent protocol for e-mail retrieval.
- 4.5. _____ is act of terrorism committed through the use of cyberspace or computer
- 4.6. _____ and _____ are the part of the document management
- 4.7. _____ collection of information about a particular topic or subject
- 4.8. A class that has no direct instances, but whose descendants may have direct instances is called a _____.
- 4.9. Java communicate with the web page through a special tag called _____.
- 4.10. In _____ topology all device connect to a common shared cable.

PART TWO
(Answer any FOUR questions)

5.
 - a. What was the various firewall technique. (6)
 - b. What is interoperability and how product or system achieve interoperability?
 - c. Explain the advantages of Peer to Peer (P2P) network? (6+5+4)
6.
 - a. What is the difference between SLIP and PPP ?
 - b. Explain the difference between router, repeater and bridge
 - c. Explain FDDI. (6+5+4)
7.
 - a. What are the various network topologies explain with example.
 - b. What is Net etiquette? (10+5)
8.
 - a. What do you understand with e-commerce explain with example (8)
 - b. Define document management (8+7)
9.
 - a. Explain Web template system
 - b. What is world wide web ? what is the contribution of java to the world wide web.
 - c. What is token? List the various type of tokens supported by the java. (4+6+5)

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Assignment 1.

Internet Surfing

- a) Open the website of Yahoo! with the help of Internet Explorer or Netscape Browser
- b) Check the properties of your browser.
- c) Change the Home Page of your browser.
- d) Check the History and clear the history.
- e) Create a Bookmark.

Assignment 2.

Email

- a) Create your email account on any of the familiar email services like hotmail, yahoo, rediffmail etc.
- b) Compose and send an email to a friend.
- c) Get the email addresses of five of your classmates. Add them to the address book of your email program. Send them each an email.
- d) Receive an email from a friend.
- e) Attach a document to the email.
- f) Retrieve an attachment from an email received.

Assignment 3.

Search Engines

- a) Open the search engines google and search for 'Doeacc'
- b) Check the Advanced Search Options of Google.
- c) Open the search engines Yahoo and search for 'Indian Railway'

Assignment 4.

Web Chart and Usenet

- a) Start Netscape and select Communicator, Messenger from the menu. Try various ways of driving Usenet News via Netscape Messenger. Look at some serious news group and set-up chat session.
- b) Open Windows Messenger and create a chat session with your friend

Assignment 5.

Web Page Development -HTML

Create a basic web page using Netscape Composer. The topic of the web page is up to you (within acceptable use).

- Create a web page containing information about you, your family and friends.

Enter a suitable title for your page. Add some sub-titles for different sections of your text. For example, you could have a subheading for where you live, your family, your interests etc.

- Format the text of your web page in different Font, Alignment styles. Move the cursor to a sub-title and set it to Heading2.

Experiment with the different heading styles to see what each one does .Which of these styles do you think is useful? Which are less useful? Why?

Experiment with the font size, color, style (bold, italic, underline, etc.) and alignment (left, center, right or indented.

- See the HTML that is generated by Browser by selecting View Page source.
- Add a picture to your web page. You have scanned in, or one taken with a digital camera. Alternatively, you can use a picture from another web page. Remember that if you put pictures that you did not take on your web page, you must check for copyright permission first.
- Experiment with different sizes of picture and different locations within your web page. Also, experiment with different alignment and text wrappings. One minor problem with Netscape Composer is that it does not give proper WYSIWYG for pictures with text wrap. You will have to save your page and view it in the browser to see exactly what the layout will be.
- Your HTML documents should have the following characteristics: -
 - a) Use of paragraphs.
 - b) Use of 1 or more levels of section headers.
 - c) Use of highlighting (bold, italics, etc.)
 - d) Use of lists.
 - e) Use of internal links (to other parts of your document) commonly used for a document table of contents.
 - f) Use of links to graphic images and alternate text, in case the image could not be found or is not loaded (alternatively).

By using the above items one should be able to create his/her own home page.

Assignment 6.

Create a document with two links to an external document. The first link should lead to the beginning of the external document. The second link should lead to a particular section in the external document.

In the external document specify a link that will lead to a particular section within it.

Text Content:

Welcome to our homepage

This page has links to the website of ABC Lever Inc.

For further information click on any of the following:

- [About ABC Lever Inc.](#)
- [Contact Information](#)

Content of Linked pages is

Contact us

ABC Lever Inc. is a conglomerate that has interests ranging from bodycare products to toilet soaps.

A couple of years ago we entered the frozen Food industry through mergers and Acquisitions.

Last year we started our plant to manufacture salt and this year it is wheat flour.

Our current turnover is about Rs. 7500 cr and by the next decade we are looking at a target of 15000 cr.

Contact Us

You can contact us at the following address:-

ABC Lever Inc.
101 Maker Chambers III,
Nariman Point,
Mumbai-21
Tel. 2102011

You can also email us at
customersservices@abclever.com

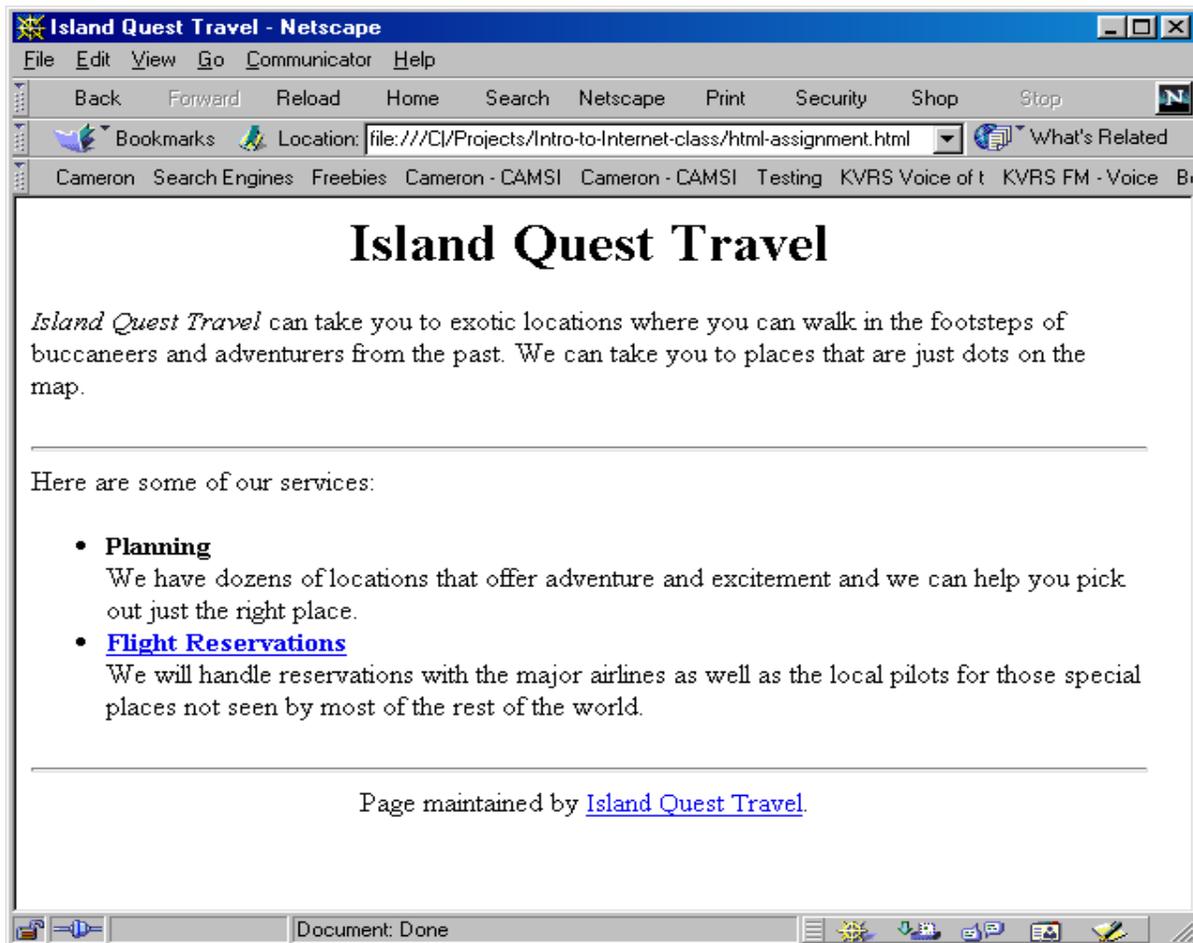
Assignment 7.

Prepare a "resume.html" that might include such information as:

- a) distinguishing marks
- b) special interests
- c) work history
- d) education and training
- e) job objective
- f) relevant skills and experience

Assignment 8.

Create the following HTML page



The keywords for the page are travel, recreation, and flight reservations.

The description for the page is

Island Quest Travel can help you make reservations for an exotic island vacation.

The words "Flight Reservations" links to a file called reservations.html.

The words "Island Quest Travel" are an email link to quest@travel.com

Assignment 9.

Design the form using HTML tags.

Employment Exchange	
First Name :	<input type="text"/>
Second Name :	<input type="text"/>
Father's Name :	<input type="text"/>
Date of Birth :	<input type="text"/>

Sex Code : M F

Qualification :

Stream :

Percentage Marks :

Nationality :

Religion :

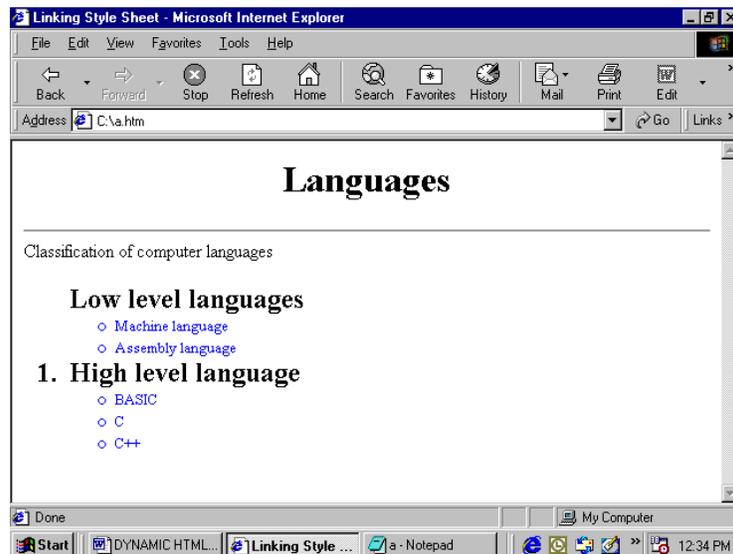
Category :

Mailing Address :

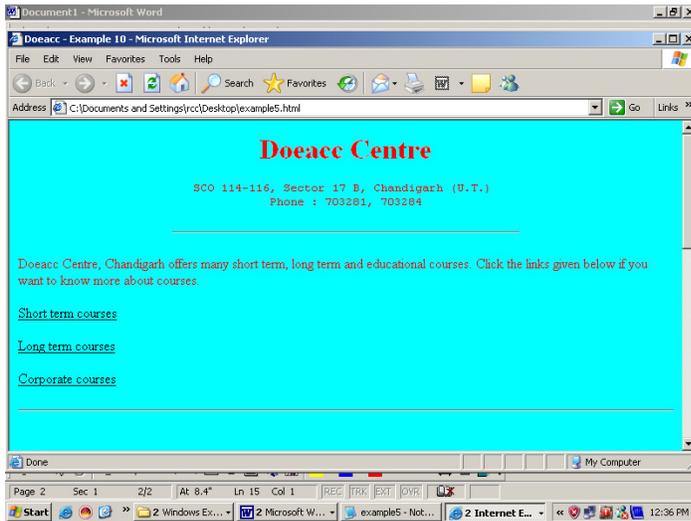
Permanent Address :

Assignment 10.

Design the following web page using HTML Tags:



Assignment 11.



Design the above webpage in which the links for courses should be in the same page with the following details:

Short term Courses.

Doeacc Center offers following short-term courses

- a) Use of Personal Computer
- b) 'C' Language
- c) 'C++" Language
- d) Visual Basic
- e) Oracle/Dev. 2000
- f) AutoCAD
- g) Internet and Web Designing

Long term courses

Doeacc Center offers following long-term courses

- a) O' Level
- b) A' Level
- c) B' Level
- d) C' Level

Corporate courses

Doeacc Center offers following corporate courses

- a) Use of Personal Computer
- b) Courses according to their requirement

Assignment 12.

- a) Make a table with your friend's details in it.
- b) Column One, your friends names
- c) Column Two, Address of your friends
- d) Column Three, Mobile No of your friends

- e) Column Four, Birth-Date of your friends

Assignment 13.

- a) Create a 4x3 table
- b) Within each table, place 12 images of Indian Tourist Spots, in each box
- c) Each image link to the corresponding site of Tourist Spot
- d) Each Image must be at least 100x100 in size

Assignment 14.

- Create a page with two frames
- The left frame of page contains the list of names & Images of the Indian National Hero's..
- On the left frame when you click on name or image, the details will be shown on the right frame.

Assignment 15.

create a job application form

- Create an area called section one and place text boxes that receives details -
 - a) Name
 - b) Age
 - c) Gender
 - d) High School
 - e) Qualifications
- Create an area called section two and place text boxes that receives details -
 - a) Previous Employment
 - b) References
 - c) Qualification
- At the end place a submit button

Assignment 16.

- a) Take the picture of the motherboard
- b) Place an image map on each item that is pointed out on the picture
- c) Have them link to some information that you know about them.
- d) There should be some sort of navigation or a back button on each page

Web Page Development – DHTML

Assignment 17.

Create a style in the <head> section

- a) Change the lists size to h4
- b) Change the links size to h2
- c) Both should also have different colors

Assignment– 18.

Create a style in the <head> section

- a) Create a list of each persons first name in the class
- b) Have each name have a different color and or size
- c) your name must be the biggest

Web Page Development - VbScript

Assignment 19.

Write VbScript code for displaying an alert dialog box with OK button, welcoming a user with a message "Welcome To my Web Site". As soon as the OK button is clicked, an image is displayed in the web browser.

Assignment 20.

Create a VbScript file that contains

- a) a textbox to accept a string and a button.
- b) When user clicks the button the script checks whether that string is palindrome or not

Web Page Development – JavaScript

Assignment 21.

Validate the form in assignment -9 . The following validation checks are required:

- a) First name, second name should not be left empty
- b) Percentage marks should be numeric
- c) Mailing address must contain @ symbol in it.

Assignment 22.

Create a an HTML document containing JavaScript code that

- a) Has a button called check out
- b) when this button is clicked on , it summons two windows
- c) Window 1: Have a question that tells user to input value of the item
- d) Window 2: Have a question that requests the user to input the amount of sales tax

Have a sentence that displays the cost of the item, the sales tax, and your final price.

Assignment 23.

Create a document that reads and stores cookies containing a user name and number of times , he or she has visited your website . Whenever the user visits the site, the system displays the cookies in alert dialogue box, increments the counter cookie by 1 and then resets the counter's expiration date to one year from the current date.

Assignment 24.

Create an HTML document that calculates the square feet of carpet required to carpet a room . Include three text boxes ; Create one text box for width of room and another for length of the room in linear feet . Also create a text box for the cost per square feet of carpeting. When you calculate the cost, add 25% to the total number of square feet to account for the closets and other features of the room. Display the total cost *in an alert dialogue box*.

Assignment 25.

Create a an HTML document with JavaScript code that

- a) Has three textboxes and a button
- b) The details to be accepted using textboxes are principal, rate of interest, and duration in years.
- c) When user clicks the Ok button a message box appears showing the simple interest of principal amount