



National Institute of Technology, Tiruchirappalli – 15
Department of Computer Science & Engineering

Assignment # 01

CSPE61 – Web Technology and its Applications (Program Elective)

Class / Semester : III CSE / VI

Date : 08.02.2024

Marks : 15

1. Design the form as shown below and enter your date of birth. Write a Java script program to display your age and the number of days remaining until your next birthday in a dialog box, when the OK button is clicked.

Enter Your Date of Birth

Enter the Day :

Enter the Month :

Enter the Year :

2. Develop a JavaScript program that will determine whether a department-store customer has exceeded the credit limit on a charge account. For each customer, the following facts are available:

- a) Account number
- b) Balance at the beginning of the month
- c) Total of all items charged by this customer this month
- d) Total of all credits applied to this customer's account this month
- e) Allowed credit limit

The program should input each of these facts from prompt dialogs as integers, calculate the new balance (= beginning balance

+ charges – credits), display the new balance and determine whether the new balance exceeds the customer's credit limit. For customers whose credit limit is exceeded, the program should output XHTML text that displays the message “Credit limit exceeded.”

3. A company wants to transmit data over the telephone, but it is concerned that its phones may be tapped. All of its data are transmitted as four-digit integers. It has asked you to write a program that will encrypt its data so that the data may be transmitted more securely. Your script should read a four-digit integer entered by the user in a prompt dialog and encrypt it as follows: Replace each digit by (the sum of that digit plus 7) modulus 10. Then swap the first digit with the third, and swap the second digit with the fourth. Then output XHTML text that displays the encrypted integer. Also perform decryption and display the original integer.
4. A parking garage charges a \$2.00 minimum fee to park for up to three hours. The garage charges an additional \$0.50 per hour for each hour or part thereof in excess of three hours. The maximum charge for any given 24-hour period is \$10.00. Assume that no car parks for longer than 24 hours at a time. Write a script that calculates and displays the parking charges for each customer who parked a car in this garage yesterday. You should input from the user the hours parked for each customer. The program should display the charge for the current customer and should calculate and display the running total of yesterday's receipts. The program should use the function Calculate Charges to determine the charge for each customer.
5. An integer is said to be prime if it is divisible by only 1 and itself. For example, 2, 3, 5 and 7 are prime, but 4, 6, 8 and 9 are not.
 - a) Write a Java Script function that determines whether a number is prime.
 - b) Use this function in a script that determines and prints all the prime numbers between 1 and 10,000. How many of these 10,000 numbers do you really have to test before being sure that you have found all the primes? Display the results in a <textarea>.
 - c) Initially, you might think that $n/2$ is the upper limit for which you must test to see whether a number is prime, but you only need go as high as the square root of n . Why? Rewrite the program, and run it both ways. Estimate the performance improvement.

6. Write a Java script program to create an array of size 3 and store three color names – Red, Green & Blue. Change the size of the array to 5 and add two more color names – Purple & Black. Display all the array elements such that each element should be displayed in the color that its name specifies.
7. Write a Web page that enables the user to play the game of 15(15 puzzle). There is a 4-by- 4 board (implemented as an XHTML table) for a total of 16 slots. One of the slots is empty. The other slots are occupied by 15 tiles, randomly numbered from 1 through 15. Any tile next to the currently empty slot can be moved into the currently empty slot by clicking on the tile. Your program should create the board with the tiles out of order. The user's goal is to arrange the tiles into sequential order row by row. Using the DHTML object model and the onclick event, write a script that allows the user swap the positions of the open position and an adjacent tile. [Hint: The onclick event should be specified for each table cell.] Also modify your solution to determine when the game is over, then prompt the user to determine whether to play again. If so, scramble the numbers.
8. Write a Java script that reads several lines of text from the keyboard and prints a table indicating the number of occurrences of each letter of the alphabet in the text. For example, the phrase
- To be, or not to be: that is the question:**
contains one "a," two "b's," no "c's," etc.
- Also write a script that reads several lines of text and prints a table indicating the number of one-letter words, two-letter words, three-letter words, etc. appearing in the text, in a tabular form. For example, the phrase **Whether 'tis nobler in the mind to suffer** contains

Word Length	Occurrences
1	0
2	2
3	1
4	2(including 'tis)
5	0
6	2
7	1

9. Write a Java script that inputs a telephone number as a string in the form (555) 555-5555. The script should use String method split to extract the area code as a token, the first three digits of the phone number as a token and the last four digits of the phone number as a token. Display the area code in one text field and the seven-digit phone number in another text field.
 10. Write an error handler that changes the alt text of an image to “Error Loading” if the image loading is not completed.
 11. You have a server-side script that cannot handle any ampersands (&) in the form data. Write a function that converts all ampersands in a form field to “and” when the field loses focus (onblur).
 12. Write a function that responds to a click anywhere on the page by displaying an alert dialog. Display the event name if the user held Shift during the mouse click. Display the element name that triggered the event if the user held Ctrl during the mouse click.
 13. Use CSS absolute positioning, onmousemove and event.x / event.y to have a sentence of text follow the mouse as the user moves the mouse over the Web page. Disable this feature if the user double-clicks (ondblclick).
 14. Modify the problem defined in question no : 12 to have an image follow the mouse as the user moves the mouse over the web page.
 15. Add two elements to the web page that users can click. Use the deitel.gif image file as the first element. When the user clicks the image, display an alert dialog box with the text “you clicked the image.” For the second element, create a one-row table containing a text string. Set the table border to one. When the user clicks the table element, display an alert dialog box containing “you clicked the table.” In the two accompanying functions, set each event object to true.
-