

**Scripting Language /Lab Works (Part-2)**

12. Working with HTML DOM

- a) Create a HTML page and write a JS program to demonstrate the use of following properties of any node objects in DOM

nodeName	nodeType	lastChild
nodeValue	parentNode	nextSibling
previousSibling	childNodes	firstChild

- b) Create a web page and write Script with JS for Selecting Document Elements as mentioned below:

- Selecting element by ID
- Selecting elements by name
- Selecting elements by tag type
- Selecting elements by CSS class
- Selecting element by `querySelector()`
- Selecting element by `querySelectorAll()`

- c) Create a web page and write Script using JS for demonstrating

- Node creation
- Node insertion ( using `appendChild()` and `insertBefore()`)
- Node replacement (using `replaceChild()`)
- Node Removal (using `removeChild()`)

- d) Demonstrate the use of following methods in DOM to work with attributes of HTML document

<code>getAttribute()</code>	<code>setAttribute()</code>
<code>hasAttribute()</code>	<code>removeAttribute()</code>

- e) Create a form to enter the record of books. The interface should be as in following figure and descriptions:

Add Book Records

Book Id:  Title:  Author(s):  Price:

Book id initially should be 100 and increments by 1 on every click of plus button. This value should be shown on textbox but cannot be editable by user. When plus button is clicked similar row should appear below it.

- f) Create a JS array containing some districts of your provenience. Now display those districts in unordered list dynamically on web page using DOM manipulation.

### 13. Understanding Regular Expression in JS

- a) Write a JS program to demonstrate the use of following concepts
- two ways of creating regular expression pattern in JS
  - using **exec()**, **test()**, **match()**, **matchAll()**, **search()**, **replace()**, **replaceAll()** and **split()** functions.
- b) Create and test for following Regex patterns in JS
- i. The first character of a string must be uppercase.
  - ii. A given value must contain a question marks, a dash and an underscore.
  - iii. The value must start from A or a and must end with full stop (.) or exclamation (!).
  - iv. The value must contain only one blank space.
  - v. The string must not contain any digits.
  - vi. The string must contain at least a symbol from the group of symbol ( , , @ , \$ , \_ , % , ! , & , \* , ^ , ~ , - , + , ( , ) , { , } , [ , ] , . , : )
  - vii. The value must not contain any special character and digits.
  - viii. The value must contain @ symbol between two words each of at least one character.
  - ix. The string must not start with digit.
  - x. The string must start with underscore character or alphabets.

- xi. The value must start with 'BCA-TU-' and after these character there must be only digits.
- xii. The value must be in email address format.
- xiii. The value must contain at least a vowel letter.
- xiv. The value contain ten digits and first digit cannot be 0.
- xv. The value should be email address and its must end with 'edu.np'
- xvi. The value should be email address and it must contain 'gmail' or 'yahoo' after @ symbol.
- xvii. The regex must match if the string contains 'nepal' case insensitively.

#### 14. Forms and Client Side Validation using JS.

- a) Write a JS program to demonstrate the use of forms object (document.forms)
- b) Create a registration form and validate using separate JS file (should be from scratch. API /Library is not allowed). The form must include following entries and validation rules:
  - First Name (required , must contain alphabets only the length should be 1 to 50)
  - Last Name (optional, must contain alphabets only the length should be 1 to 50)
  - Date of birth (required, use date type)
  - Gender (required, must be selected from combo box)
  - Provenience (required, must be selected from combo box, 7 Provenience of Nepal)
  - District (required, must be selected from combo box, 77 districts of Nepal)
  - Cell Phone (required, 10 digits only not other symbols and alphabets)
  - Email address (optional, if entered must be in email address format)
  - User Name (required, must start with alphabet, can contain digits and only two special character (@ and \_) are allowed, length must be in between 6 to 15 characters)
  - Password (required, must contain at least a digit, a special character, an uppercase letter and a lowercase letter, length must be in between 8 to 20 characters)
  - Confirm password (required, must match the value entered in password field)
  - Register ( a submit button)

Show the error message with guideline next to the element in red color if the value is not satisfying the rule.

#### 15. Cookies in JS

Write a JS program to demonstrate following concepts:

- Different ways of cookie creation
- Reading cookie
- Changing cookie
- Deleting cookie