**TRINITY INTERNATIONAL SS & COLLEGE**

**Dillibazar Height, Kathmandu, Nepal**

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**LAB WORK #1: JavaScript**

**(COMPUTER SCIENCE)**

**SUBMITTED BY: SUBMITTED TO:**

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**2. Objective**

The main objectives of the lab work are as follows:

1. To understand different variable types in JavaScript.
2. To get input from user and display output.
3. To perform arithmetic and logical operation in JavaScript.
4. To understand and apply conditional statements in JavaScript.

**3. Theoretical Background**

Introduction:

JavaScript is a versatile programming language widely employed for developing dynamic and interactive web pages. This theoretical background aims to illuminate key concepts in JavaScript, focusing on its syntax and fundamental components.

Variables and Data Types:

JavaScript utilizes variables as containers for storing data values. These variables can hold various data types, including numbers, strings, booleans, arrays, and objects. Declaration of variables involves the use of the "var," "let," or "const" keywords, each with distinct scoping rules. Understanding the nuances of data types and variable declarations is crucial for effective data manipulation in JavaScript.

Functions:

Functions in JavaScript play a central role in structuring code and enabling reusability. They can be declared using the "function" keyword and may accept parameters for dynamic behavior. The return statement allows functions to yield results, contributing to modular and efficient code organization. Additionally, the concept of anonymous functions and arrow functions provides alternative syntax options, enhancing the expressive power of JavaScript.

Objects:

Objects in JavaScript serve as composite data types, encapsulating variables and functions under a single name. They facilitate the creation of complex data structures and enable the modeling of real-world entities. Accessing object properties involves using the dot notation, granting a mechanism for organized data representation.

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Syntax of Objects:

let object\_name = {

property1: value1,

property2: value2,

// ... more properties

method: function() {

// code for the method

}

};

Arrays:

Arrays are essential in JavaScript for storing and manipulating lists of values. They can hold elements of different data types and offer methods for efficient data retrieval and modification. Understanding array syntax and employing array methods enhances the language's capacity for handling collections of data.

Syntax of Arrays:

let array\_name = [element1, element2, /\* ... more elements \*/];

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Q1. WAP to find area and circumference of circle.

|  |
| --- |
| Source Code |

Q2. Write a JS program to find the square root of a number. Here the number is entered by the user.

|  |
| --- |
| Source Code |

Q3. Write a program to pick the greatest number among three numbers entered by the user.

|  |
| --- |
| Source Code |

Q4. Write a program to input a number and know that it is an even or odd number.

|  |
| --- |
| Source Code |

Q5. Write a program to input your name and age using form and know whether he/she is eligible to vote or not.

|  |
| --- |
| Source Code |

Q6. Write a program to perform following operations using switch structure.

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| --- |
| Source Code |

Q7. WAP to print factorial value of a number.

|  |
| --- |
| Source Code |

Q8. WAP to print multiplication table of a number.

|  |
| --- |
| Source Code |

Q9. Write a program to reverse a string.

|  |
| --- |
| Source Code |

Q10. An array contains multiple strings. Print them in reverse order.

|  |
| --- |
| Source Code |

Q11. Write a program to insert a string “We are learning JS” via form object getElementById() method. Use paragraph with id.

|  |
| --- |
| Source Code |

Q12. Input your name and grade using form. Validate this with a message ‘This field is required’, using onclick() event.

|  |
| --- |
| Source Code |

Q13. Write any two paragraphs in your html page. Now write a program using JQuery to hide that written paragraphs as you click on that.

|  |
| --- |
| Source Code |

Q14. Use JQuery to create an alert message for a button.

|  |
| --- |
| Source Code |

**5. Conclusion**

In conclusion, the laboratory work in JavaScript has provided a valuable hands-on experience for understanding and implementing key concepts in web development. Through the practical exercises and coding challenges, students have gained proficiency in JavaScript syntax, data structures, and asynchronous programming. The labs have also exposed participants to popular libraries and frameworks, fostering a deeper comprehension of modern web technologies. Furthermore, the troubleshooting and debugging aspects of the lab work have honed problem-solving skills, essential for real-world application development. Overall, the JavaScript lab work has successfully bridged theoretical knowledge with practical skills, equipping participants with the tools necessary to excel in the dynamic and ever-evolving field of web development.