Experiment 8

**Name** : Mohammad Wasi

**SAP ID** : 500110709

**Batch** : AIML B8

Aim: **: NodeJS basic exercises**..**.**

**Objective :**

1. Hello World Server: Create an HTTP server using Node.js and Express to respond with "Hello, World!" to requests.
2. Regular Expression Replacement: Implement a Node.js program to replace two or more 'a's with 'b' in a string using a Regular Expression.
3. Basic Calculator: Develop an HTTP-based basic calculator using Node.js and Express for arithmetic operations.
4. Array Iteration: Write Node.js code to iterate over an array and print each element with its index.

Theory :

Node.js enables server-side JavaScript programming. Express, a popular framework, simplifies building web servers. Regular Expressions provide powerful string manipulation tools. In HTTP-based applications, Express routes handle different endpoints. Functions like parseFloat convert string inputs to numbers for calculations. Array iteration using forEach is efficient for processing each element in an array..

**Code**

**Question 1: Create a simple “Hello, World!” server using Node.js and Express.**

const express = require('express');

const app = express();

const port = 3000;

app.get('/', (req, res) => {

res.send('Hello, World!');

});

app.listen(port, () => {

console.log(`wasi\_hello\_world server is listening at http://localhost:${port}`);

});



**Question 2: Write a node.js program to replace two or more a's with the letter b on the given string using Regular Expression.**

function wasi\_replaceAwithB(str) {

return str.replace(/aa+/g, 'b');

}

const inputString = "This is a sample string with aaaa and aabaa.";

const resultString = wasi\_replaceAwithB(inputString);

console.log(`Modified String: ${resultString}`);



**Question 3: Create a basic calculator that can perform arithmetic operations (addition, subtraction, multiplication, and division) through HTTP requests.**

const express = require('express');

const app = express();

const port = 3000;

// Calculator functions

function wasi\_calculate(a, b, operator) {

switch (operator) {

case 'add':

return a + b;

case 'subtract':

return a - b;

case 'multiply':

return a \* b;

case 'divide':

return a / b;

default:

return 'Invalid operator';

}

}

// HTTP GET request for calculator

app.get('/calculator/:operator', (req, res) => {

const { operator } = req.params;

const { a, b } = req.query;

const result = wasi\_calculate(parseFloat(a), parseFloat(b), operator);

res.send(`Result: ${result}`);

});

app.listen(port, () => {

console.log(`wasi\_calculator server is listening at http://localhost:${port}`);

});



**Question 4: Write a node.js code to iterate over the given array.**

function wasi\_iterateArray(arr) {

arr.forEach((element, index) => {

console.log(`Index ${index}: ${element}`);

});

}

const myArray = [1, 2, 3, 4, 5];

wasi\_iterateArray(myArray);

