

**Pandit Deendayal Energy
University**

B. Tech. (Computer Science & Engineering)

Course Name: Advanced Web Technology Theory

Course Code: 20CP314P; AY-2023-24; Sem-6

Total Marks: 5

Instructions for Assignment:

1. Submit this assignment on or before 5th February, 2024.
 2. Contents of assignment should be creative, innovative and plagiarism-free.
-

Name	Jaivik Jariwala
Roll Number	21BCP004
Division	1
Assignment Number	1
Submitted to	Dr. Komal Singh

Assignment 1

1. Create a module named “calculator” using nodejs containing basic arithmetic functions such as addition, subtraction, division and multiplication. Perform arithmetic operations by importing the module. **[CO1]**.
2. Design a nodejs script to read a text file line by line and copy the contents of the text to another text file. **[CO1]**.

Solutions

Answer 1.

calculator.js

```
// Addition Op func
function add(m, n) {
    return m + n;
}

// Subtraction Op func
function subtract(m, n) {
    return m - n;
}

// Multiplication Op func
function multiply(m, n) {
    return m * n;
}

// Division Op func
function divide(m, n) {
    if (n === 0) {
        throw new Error("Cannot divide by zero");
    }
    return m / n;
}

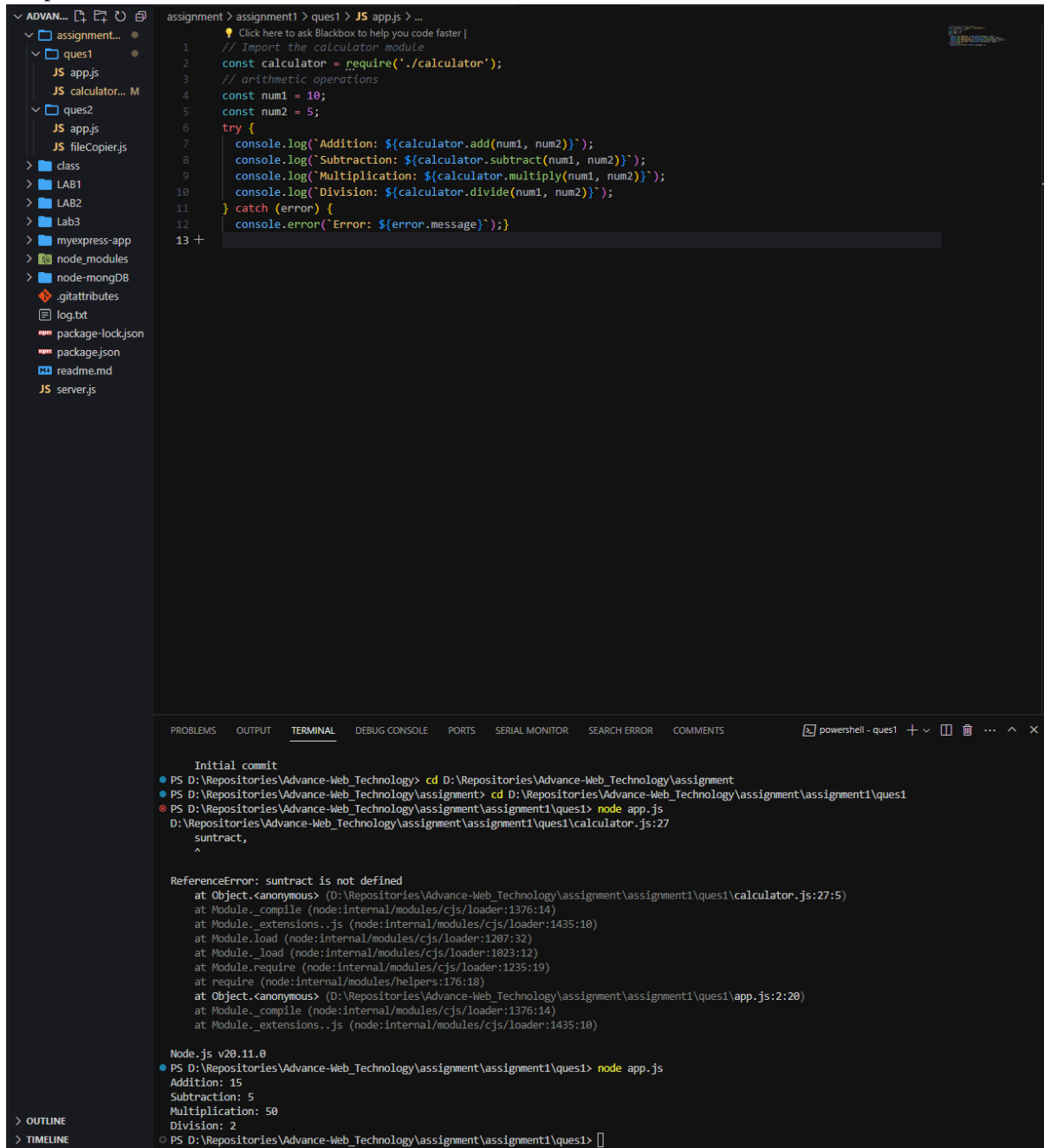
// Export the func to App
module.exports = {
    add,
    subtract,
    multiply,
    divide,
};
```

app.js

```
// Import the calculator module
const calculator = require('./calculator');
// arithmetic operations
const num1 = 10;
const num2 = 5;
try {
    console.log(`Addition: ${calculator.add(num1, num2)}`);
    console.log(`Subtraction: ${calculator.subtract(num1, num2)}`);
    console.log(`Multiplication: ${calculator.multiply(num1, num2)}`);
    console.log(`Division: ${calculator.divide(num1, num2)}`);
} catch (error) {
    console.error(`Error: ${error.message}`);
}
```

To run: Codes node app.js

Output:



The screenshot shows the Visual Studio Code editor interface. On the left, the Explorer sidebar displays a file tree with folders like 'assignment1' and 'ques1', and files like 'app.js' and 'calculator.js'. The main editor area shows the content of 'app.js', which imports a 'calculator' module and performs arithmetic operations. The bottom panel shows the 'TERMINAL' tab with the command 'node app.js' executed in a PowerShell terminal. The output displays the results of the calculations: Addition: 15, Subtraction: 5, Multiplication: 50, and Division: 2. There is also a reference error message for 'subtract' which is not defined in the code.

```
assignment > assignment1 > ques1 > JS app.js > ...
1 // Import the calculator module
2 const calculator = require('./calculator');
3 // arithmetic operations
4 const num1 = 10;
5 const num2 = 5;
6
7 try {
8   console.log(`Addition: ${calculator.add(num1, num2)}`);
9   console.log(`Subtraction: ${calculator.subtract(num1, num2)}`);
10  console.log(`Multiplication: ${calculator.multiply(num1, num2)}`);
11  console.log(`Division: ${calculator.divide(num1, num2)}`);
12 } catch (error) {
13   console.error(`Error: ${error.message}`);
14 }
```

Initial commit

```
PS D:\Repositories\Advance-Web_Technology> cd D:\Repositories\Advance-Web_Technology\assignment
PS D:\Repositories\Advance-Web_Technology\assignment> cd D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques1
PS D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques1> node app.js
D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques1\calculator.js:27
    subtract,
    ^
ReferenceError: subtract is not defined
    at Object.<anonymous> (D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques1\calculator.js:27:5)
    at Module._compile (node:internal/modules/cjs/loader:1376:14)
    at Module_extensions..js (node:internal/modules/cjs/loader:1435:10)
    at Module_load (node:internal/modules/cjs/loader:1287:32)
    at Module_load (node:internal/modules/cjs/loader:1823:12)
    at Module.require (node:internal/modules/cjs/loader:1235:19)
    at require (node:internal/modules/helpers:176:18)
    at Object.<anonymous> (D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques1\app.js:2:20)
    at Module._compile (node:internal/modules/cjs/loader:1376:14)
    at Module_extensions..js (node:internal/modules/cjs/loader:1435:10)

Node.js v20.11.0
PS D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques1> node app.js
Addition: 15
Subtraction: 5
Multiplication: 50
Division: 2
PS D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques1>
```

PS D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques1> node app.js

Addition: 15

Subtraction: 5

Multiplication: 50

Division: 2

Answer.2

fileCopier.js

```
// Import required modules
const fs = require('fs');
const readline = require('readline');

// Function to copy the content of one file to another
function copyFile(inputFilePath, outputFilePath) {
  // Create a readable stream to read the input file
  const inputStream = fs.createReadStream(inputFilePath, 'utf-8');

  // Create a writable stream to write to the output file
  const outputStream = fs.createWriteStream(outputFilePath);

  // Create a readline interface for reading the input stream line by line
  const rl = readline.createInterface({
    input: inputStream,
    crlfDelay: Infinity,
  });

  // Event listener for each line read from the input file
  rl.on('line', (line) => {
    // Write the line to the output file
    outputStream.write(line + '\n');
  });

  // Event listener for the end of the input stream
  rl.on('close', () => {
    // Close the output stream
    outputStream.end();
    console.log('File copy completed.');
```

App.js

```
const fileCopier = require('./fileCopier');

// Input and output file paths
const inputFile = 'input.txt';
const outputFile = 'output.txt';

// Call the copyFile function from the module
fileCopier.copyFile(inputFile, outputFile);
```

To run: Codes
node app.js

Output:

```
assignment > assignment1 > ques2 > output.txt
1 hello world
2 im not a SDE but DS,R,A&CV E
3 +

1
2
3 +

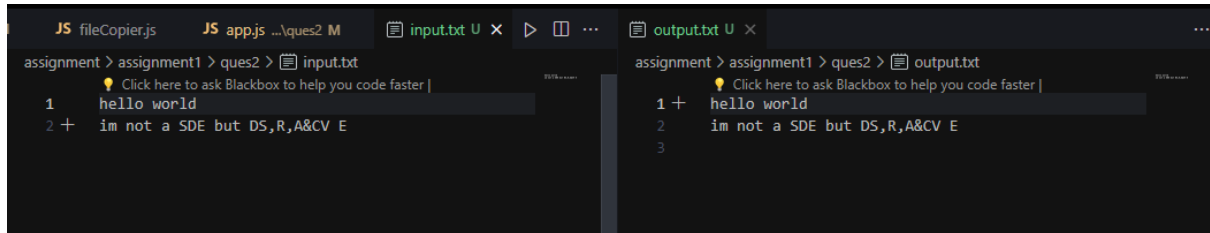
class
LAB1
LAB2
Lab3
myexpress-app
node_modules
node-mongDB
.gitattributes
log.txt
package-lock.json
package.json
readme.md
server.js

assignment1\ques1\app.js
assignment1\ques2\app.js
assignment1\ques2\fileCopier.js
assignment1\ques2\input.txt
assignment1\ques2\output.txt

Node.js v20.11.0
PS D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques1> node app.js
Addition: 15
Subtraction: 5
Multiplication: 50
Division: 2
PS D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques1> .
At line:1 char:1
+ .
+ ~
Missing expression after '.', in pipeline element.
+ CategoryInfo          : ParserError: (:) [], ParentContainsErrorRecordException
+ FullyQualifiedErrorId : MissingExpression

PS D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques1> cd D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques2
PS D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques2> node app.js
Error reading the input file: ENOENT: no such file or directory, open 'D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques2\input.txt'
PS D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques2> node app.js
File copy completed.
PS D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques2>
```

```
PS D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques2> node app.js
Error reading the input file: ENOENT: no such file or directory, open 'D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques2\input.txt'
PS D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques2> node app.js
File copy completed.
PS D:\Repositories\Advance-Web_Technology\assignment\assignment1\ques2>
```



```
JS fileCopier.js JS app.js ...\ques2 M input.txt U x output.txt U x
assignment > assignment1 > ques2 > input.txt
1 hello world
2 + im not a SDE but DS,R,A&CV E

assignment > assignment1 > ques2 > output.txt
1 + hello world
2 im not a SDE but DS,R,A&CV E
3
```

Find my code at Github: https://github.com/Jaivik-Jariwala/Advance-Web_Technology