Assignment 2

Source Code 1:

```
const readline = require('readline');
// Create an interface to read input from the user
const rl = readline.createInterface({
    input: process.stdin,
    output: process.stdout
});
// Function to find the mode
const findMode = (arr) => {
    const frequency = {};
    let maxFrequency = 0;
    let mode = null;
    arr.forEach(num => {
        frequency[num] = (frequency[num] || 0) + 1;
        if (frequency[num] > maxFrequency) {
            maxFrequency = frequency[num];
            mode = num;
        }
    });
    return mode;
};
// Function to prompt the user to enter the numbers
const promptForNumbers = () => {
    rl.question('Please enter the numbers separated by commas: ', (input) => {
        // Convert input string to an array of numbers
        const numbers = input.split(',').map(num => num.trim());
```

```
        // Validate the input to ensure all entries are numbers
        const areAllNumbers = numbers.every(num => !isNaN(num));
        if (areAllNumbers) {
            const numberArray = numbers.map(Number);
            // Find and output the mode
            console.log(`The mode is: ${findMode(numberArray)}`);
            rl.close(); // Close the readline interface
        } else {
            console.log('Invalid input. Please enter only numbers separated by commas.');
            promptForNumbers(); // Prompt the user to enter the numbers again
        }
    });
};

// Start the prompt
promptForNumbers();
```

Source Code 2:

```
const swapKeysAndValues = (obj) =>
  Object.fromEntries(Object.entries(obj).map(([key, value]) => [value, key]));
// Example usage:
const input = { "N": "M", "w": "This is String", "c": 4};
const output = swapKeysAndValues(input);
console.log(output);
```

Source Code 3:

```
const multiply = (callback, num1, num2) => {
```

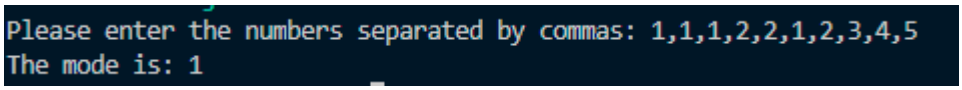
```
  const result = num1 * num2;
  callback(result);
};
// Example usage:
const printResult = (result) => {
  console.log("The result is:", result);
};
multiply(printResult, 13232, 332324);
```

Source Code 4:

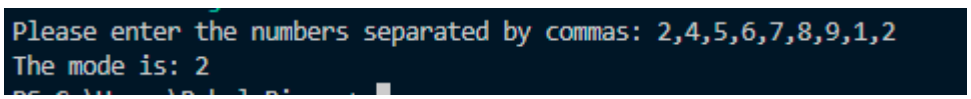
```
const numbers = [120, 209, 230, 340, 550];
// Task 1: Double each number in the array using an arrow function
const doubledNumbers = numbers.map(num => num * 2);
// Task 2: Log each doubled number along with its index using template literals
doubledNumbers.forEach((doubledValue, index) => {
  console.log(`The doubled value of number at index ${index} is ${doubledValue}.`);
});
```

Input and Output for Source Code 1:

Input and Output 1:



Input and Output 2:



Input and Output:

```
Please enter the numbers separated by commas: 283,32,4,34,435,63,52,342,32
The mode is: 32
```

Input and Output for Source Code 2:

Input 1:

```
const input = { "a": 1, "b": 2, "c": 3};
```

Output 1:

```
{ '1': 'a', '2': 'b', '3': 'c' }
```

Input 2:

```
const input = { "N": 1, "w": 2, "c": "D"};
```

Output 2:

```
PS C:\Users\Rahul Biswas> node "f:\Masters in Computer and I
ion2.js"
{ '1': 'N', '2': 'w', D: 'c' }
```

Input 3:

```
const input = { "N": "M", "w": "This is String", "c": 4};
```

Output 3:

```
PS C:\Users\Rahul Biswas> node "f:\Masters in Computer a
ion2.js"
{ '4': 'c', M: 'N', 'This is String': 'w' }
```

Input and Output for Source Code 3:

Input 1:

```
multiply(printResult, 3, 4);
```

Output 1:

```
The result is: 12
```

Input 2:

```
multiply(printResult, 13, 34);
```

Output 2:

```
The result is: 442
```

Input 3:

```
multiply(printResult, 13232, 332324);
```

Output 3:

```
The result is: 4397311168
```

Input and Output for Source Code 4:

Input 1:

```
const numbers = [1, 2, 3, 4, 5];
```

Output 1:

```
The doubled value of number at index 0 is 2.
The doubled value of number at index 1 is 4.
The doubled value of number at index 2 is 6.
The doubled value of number at index 3 is 8.
The doubled value of number at index 4 is 10.
```

Input 2:

```
const numbers = [10, 20, 30, 40, 50];
```

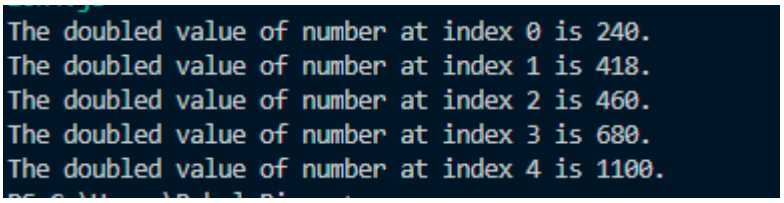
Output 2:

```
The doubled value of number at index 0 is 20.
The doubled value of number at index 1 is 40.
The doubled value of number at index 2 is 60.
The doubled value of number at index 3 is 80.
The doubled value of number at index 4 is 100.
```

Input 3:

```
const numbers = [120, 209, 230, 340, 550];
```

Output 3:



Remarks:

Solution 1 requires a Node package to be installed in order to run, as it uses some Node package methods like require.