



MOBILE APPLICATION DEVELOPMENT ASSIGNMENT 02

NAME:

MUHAMMAD MUAAB SHOAIB

REG. NO:

FA20-BCS-074

CLASS:

BCS-6B

SUBMITTED TO:

MR. MUHAMMAD KAMRAN

DATE:

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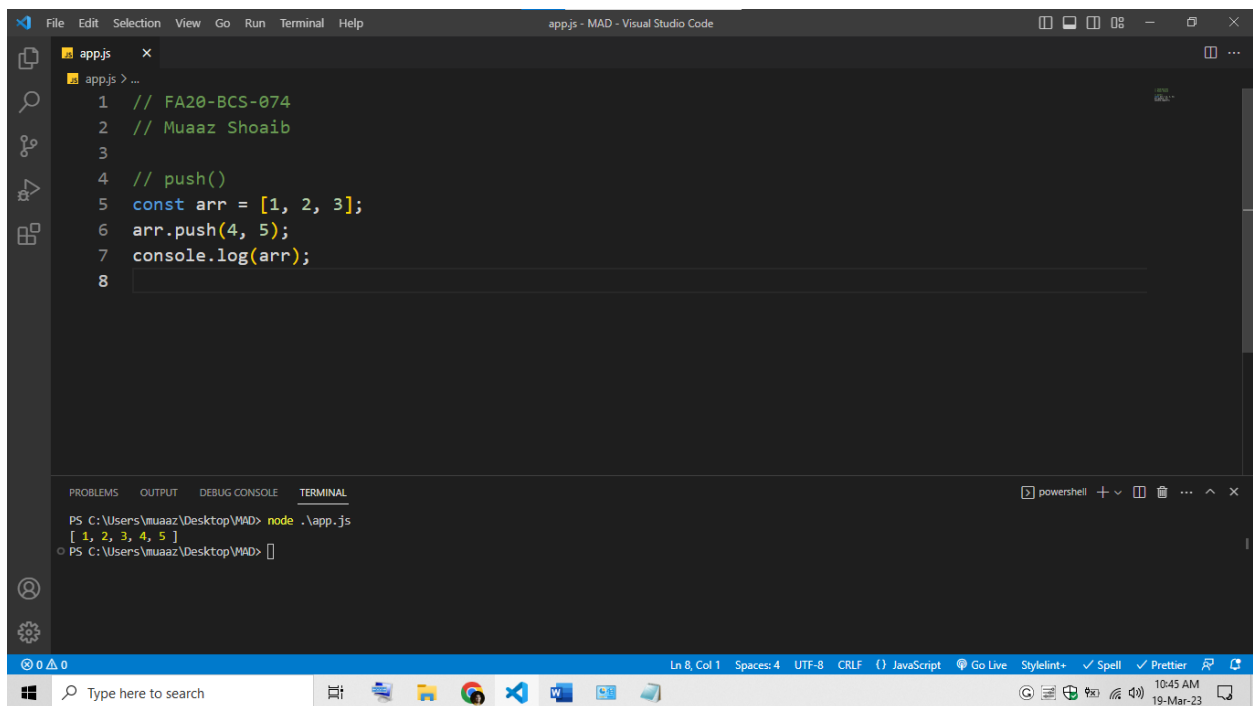
Q1: Array functions in JavaScript with examples.

push

This method adds one or more elements to the end of an array and returns the new length of the array.

```
// FA20-BCS-074
// Muaaz Shoaib

// push()
const arr = [1, 2, 3];
arr.push(4, 5);
console.log(arr);
```

A screenshot of the Visual Studio Code editor interface. The main editor window shows a file named 'app.js' with the following code:

```
1 // FA20-BCS-074
2 // Muaaz Shoaib
3
4 // push()
5 const arr = [1, 2, 3];
6 arr.push(4, 5);
7 console.log(arr);
8
```

 The bottom panel shows the 'TERMINAL' tab with the command 'node .\app.js' executed, resulting in the output '[1, 2, 3, 4, 5]'. The status bar at the bottom indicates 'Ln 8, Col 1', 'Spaces: 4', 'UTF-8', 'CRLF', and various extensions like 'JavaScript', 'Go Live', 'Stylelint+', 'Spell', and 'Prettier' are active.

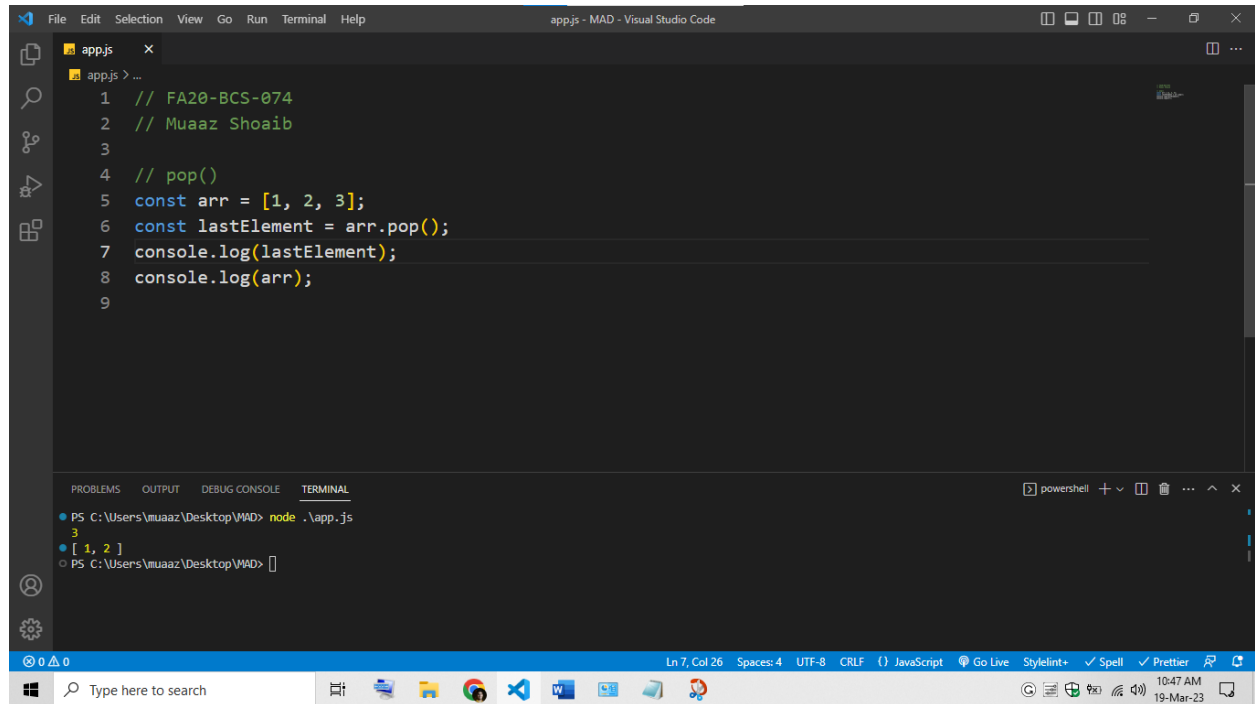
pop

This method removes the last element from an array and returns that element.

```
// FA20-BCS-074
// Muaaz Shoaib

// pop()
```

```
const arr = [1, 2, 3];
const lastElement = arr.pop();
console.log(lastElement);
console.log(arr);
```



The screenshot shows the Visual Studio Code interface. The editor window displays a file named `app.js` with the following code:

```
1 // FA20-BCS-074
2 // Muaaz Shoaib
3
4 // pop()
5 const arr = [1, 2, 3];
6 const lastElement = arr.pop();
7 console.log(lastElement);
8 console.log(arr);
9
```

The bottom panel shows the `TERMINAL` tab with the following output:

```
PS C:\Users\muaz\Desktop\MAD> node .\app.js
3
[ 1, 2 ]
PS C:\Users\muaz\Desktop\MAD>
```

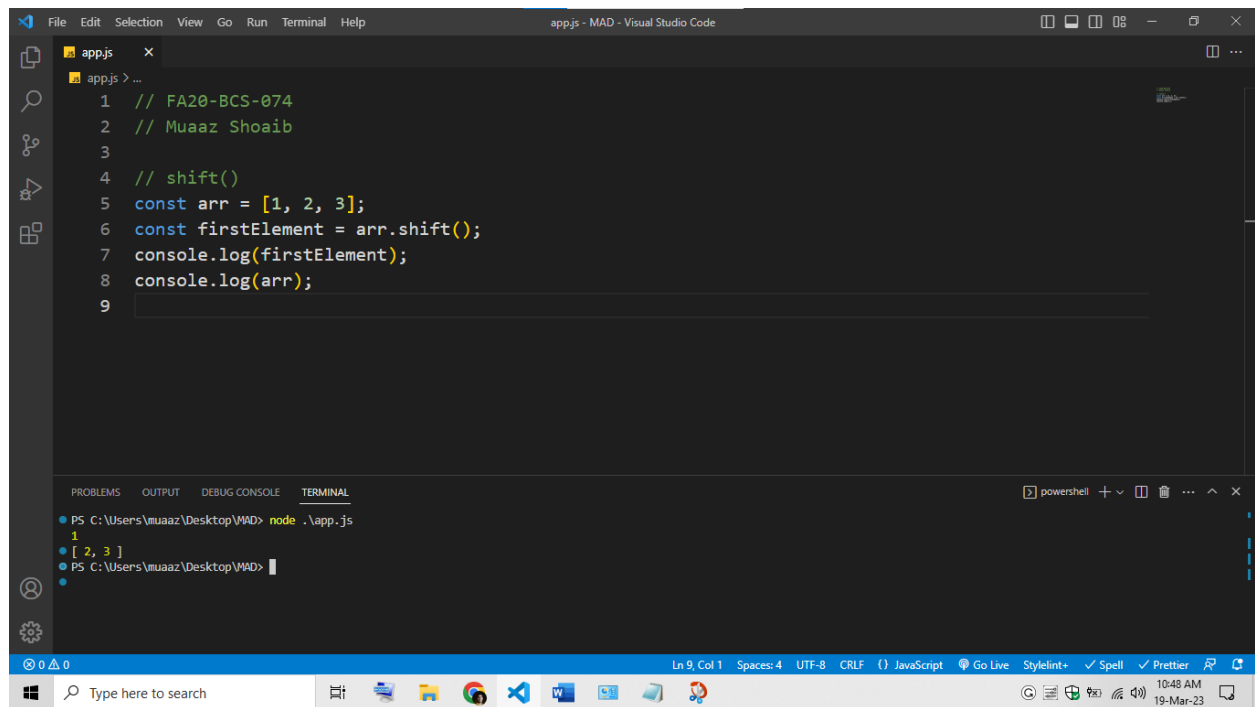
The status bar at the bottom indicates the current line is 7, column 26, with 4 spaces, UTF-8 encoding, and CRLF line endings. It also shows various extensions like JavaScript, Go Live, Stylelint, Spell, and Prettier are installed.

shift

This method removes the first element from an array and returns that element.

```
// FA20-BCS-074
// Muaaz Shoaib

// shift()
const arr = [1, 2, 3];
const firstElement = arr.shift();
console.log(firstElement);
console.log(arr);
```



The screenshot shows the Visual Studio Code interface. The editor window displays a file named `app.js` with the following code:

```
1 // FA20-BCS-074
2 // Muaaz Shoaib
3
4 // shift()
5 const arr = [1, 2, 3];
6 const firstElement = arr.shift();
7 console.log(firstElement);
8 console.log(arr);
9
```

The terminal at the bottom shows the command `node .\app.js` being executed, with the output:

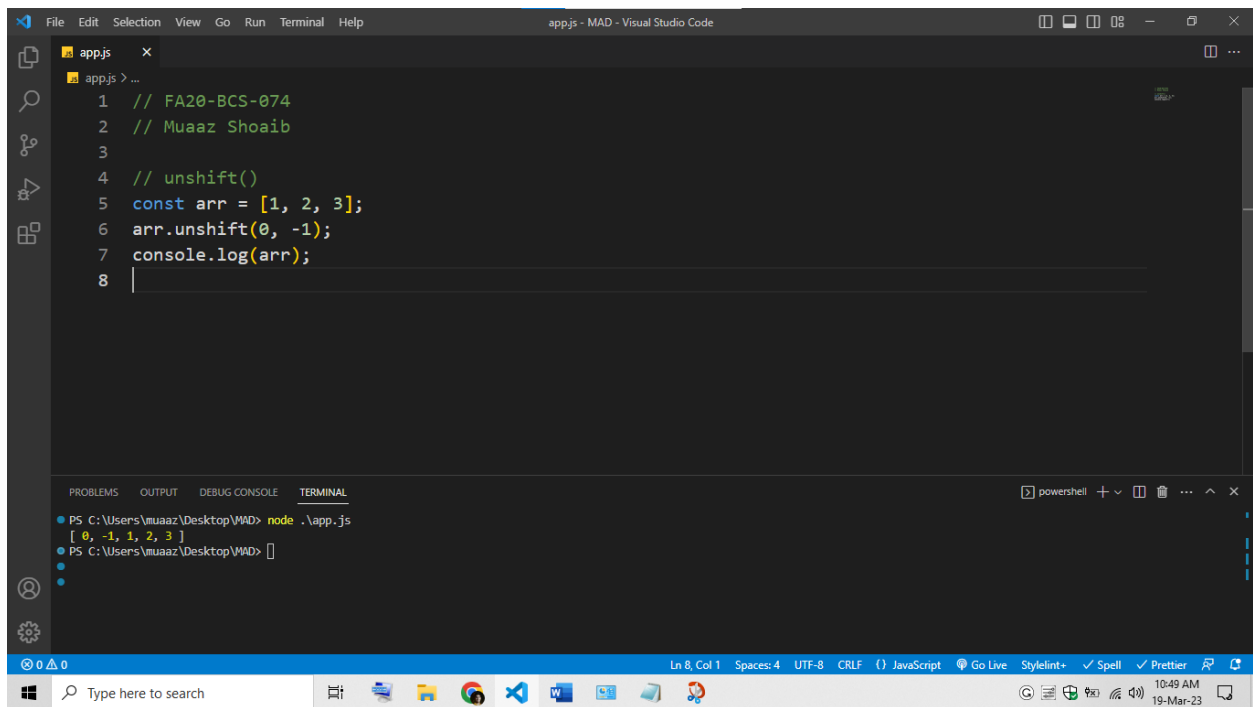
```
1
[ 2, 3 ]
PS C:\Users\muuaz\Desktop\WAD>
```

unshift

This method adds one or more elements to the beginning of an array and returns the new length of the array.

```
// FA20-BCS-074
// Muaaz Shoaib

// unshift()
const arr = [1, 2, 3];
arr.unshift(0, -1);
console.log(arr);
```



The screenshot shows the Visual Studio Code interface. The editor window displays a file named `app.js` with the following code:

```
1 // FA20-BCS-074
2 // Muaaz Shoaib
3
4 // unshift()
5 const arr = [1, 2, 3];
6 arr.unshift(0, -1);
7 console.log(arr);
8
```

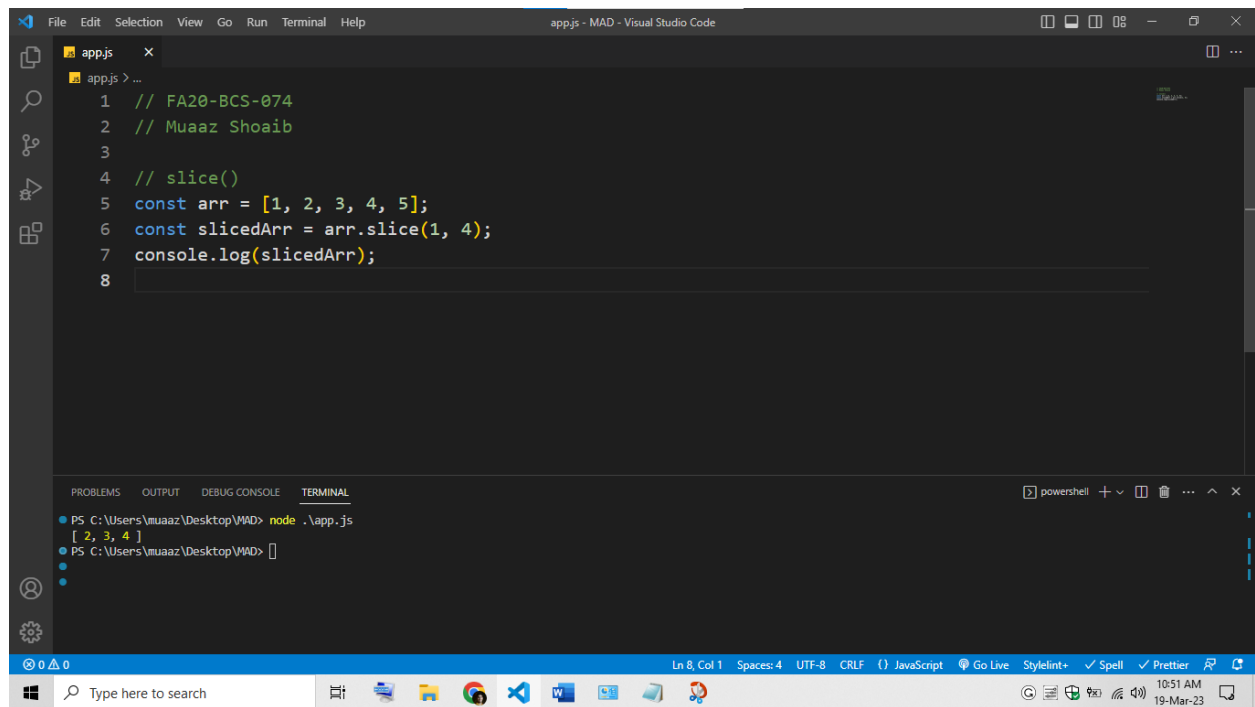
The terminal at the bottom shows the command `node .\app.js` being executed, resulting in the output `[0, -1, 1, 2, 3]`.

slice

This method returns a shallow copy of a portion of an array into a new array.

```
// FA20-BCS-074
// Muaaz Shoaib

// slice()
const arr = [1, 2, 3, 4, 5];
const slicedArr = arr.slice(1, 4);
console.log(slicedArr);
```



The screenshot shows the Visual Studio Code interface. The editor window displays a file named `app.js` with the following code:

```
1 // FA20-BCS-074
2 // Muaaz Shoaib
3
4 // slice()
5 const arr = [1, 2, 3, 4, 5];
6 const slicedArr = arr.slice(1, 4);
7 console.log(slicedArr);
8
```

The bottom panel shows the `TERMINAL` tab with the following output:

```
PS C:\Users\muuaz\Desktop\WAD> node .\app.js
[ 2, 3, 4 ]
PS C:\Users\muuaz\Desktop\WAD>
```

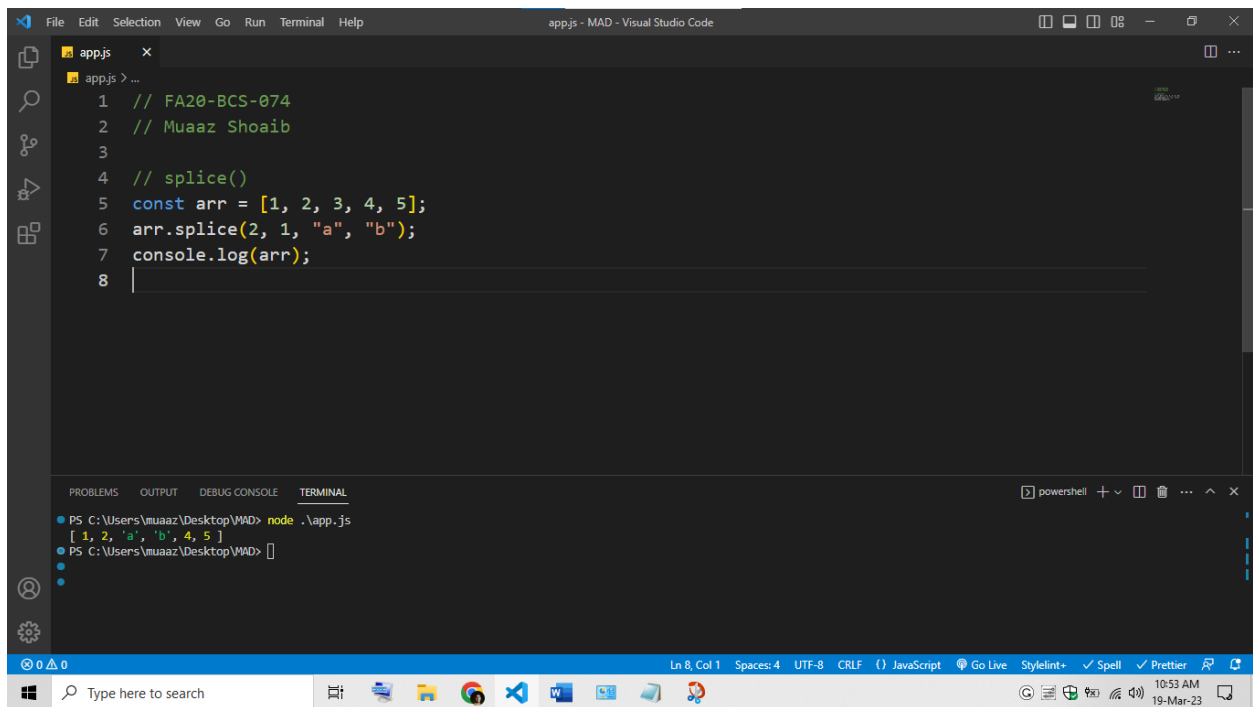
The status bar at the bottom indicates the current line and column as `Ln 8, Col 1`, and the file encoding as `UTF-8`.

splice

This method changes the contents of an array by removing or replacing existing elements and/or adding new elements.

```
// FA20-BCS-074
// Muaaz Shoaib

// splice()
const arr = [1, 2, 3, 4, 5];
arr.splice(2, 1, "a", "b");
console.log(arr);
```



The screenshot shows the Visual Studio Code interface. The editor window displays a file named `app.js` with the following code:

```
1 // FA20-BCS-074
2 // Muaaz Shoaib
3
4 // splice()
5 const arr = [1, 2, 3, 4, 5];
6 arr.splice(2, 1, "a", "b");
7 console.log(arr);
8
```

The terminal at the bottom shows the command `node .\app.js` being executed, resulting in the output:

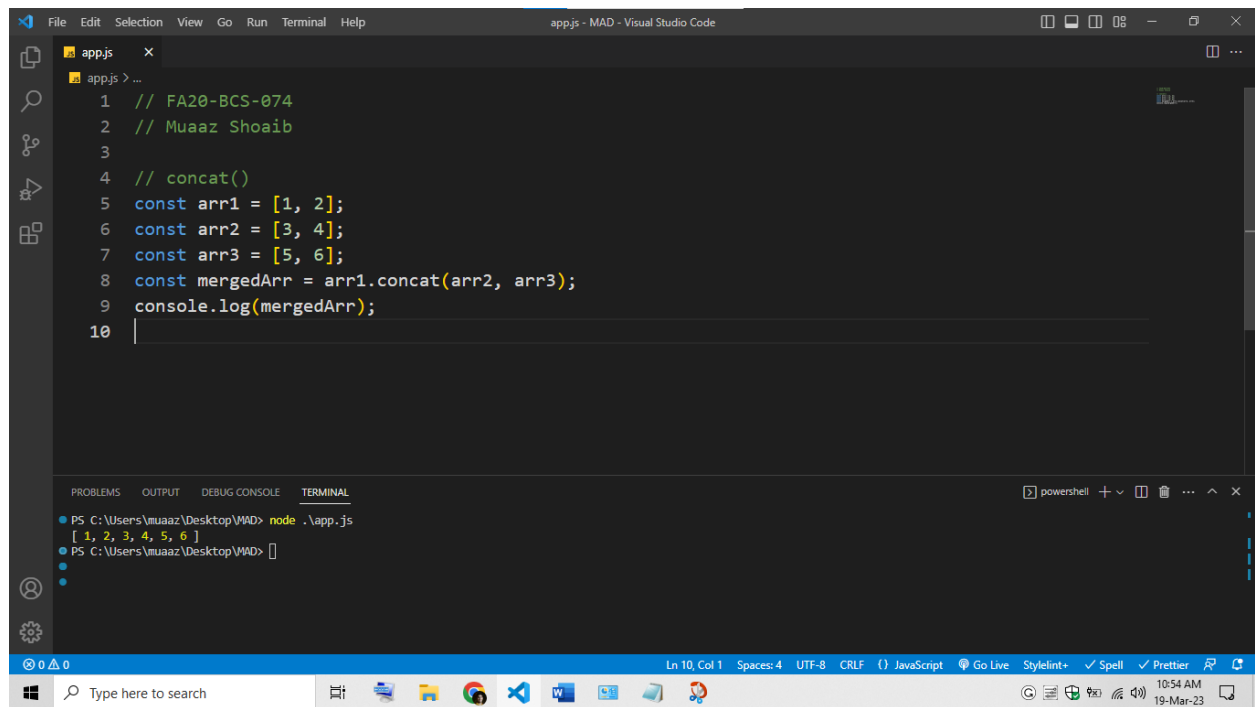
```
[ 1, 2, 'a', 'b', 4, 5 ]
```

concat

This method merges two or more arrays into a new array.

```
// FA20-BCS-074
// Muaaz Shoaib

// concat()
const arr1 = [1, 2];
const arr2 = [3, 4];
const arr3 = [5, 6];
const mergedArr = arr1.concat(arr2, arr3);
console.log(mergedArr);
```



The screenshot shows the Visual Studio Code interface. The editor window displays a file named `app.js` with the following code:

```
1 // FA20-BCS-074
2 // Muaaz Shoaib
3
4 // concat()
5 const arr1 = [1, 2];
6 const arr2 = [3, 4];
7 const arr3 = [5, 6];
8 const mergedArr = arr1.concat(arr2, arr3);
9 console.log(mergedArr);
10
```

The terminal at the bottom shows the command `node .\app.js` being executed, resulting in the output:

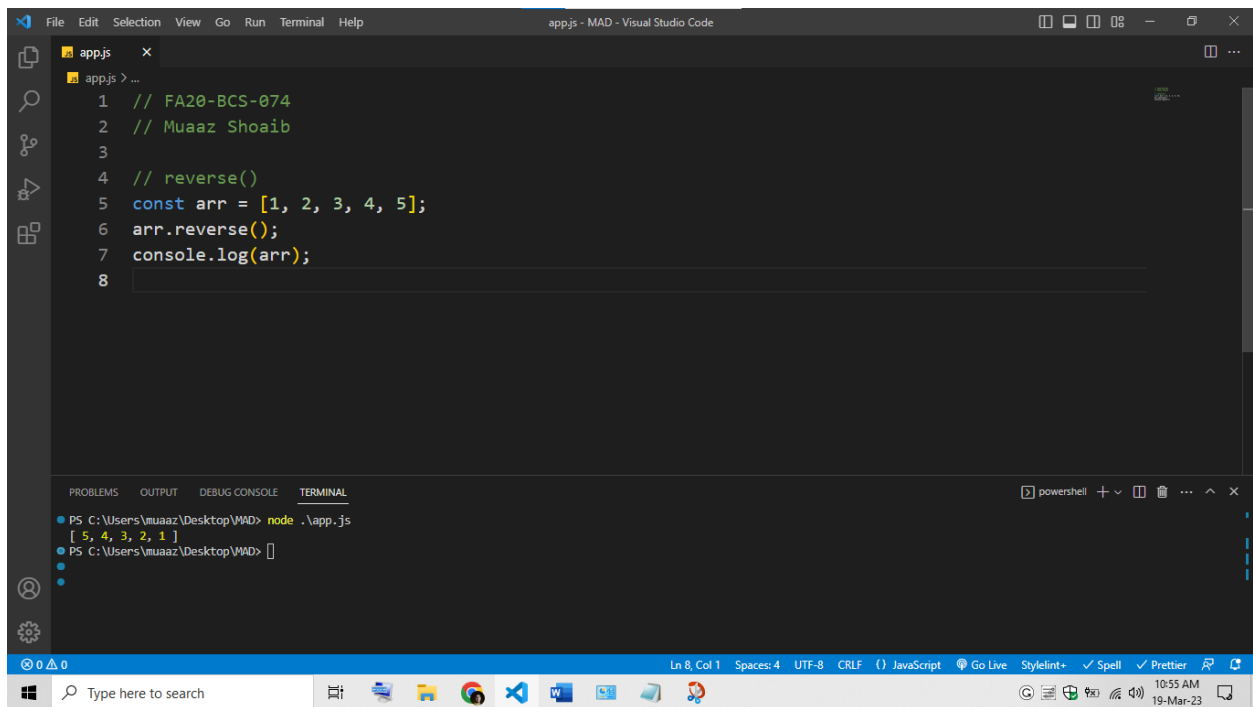
```
PS C:\Users\muuaz\Desktop\WAD> node .\app.js
[ 1, 2, 3, 4, 5, 6 ]
PS C:\Users\muuaz\Desktop\WAD>
```

reverse

This method reverses the order of the elements in an array.

```
// FA20-BCS-074
// Muaaz Shoaib

// reverse()
const arr = [1, 2, 3, 4, 5];
arr.reverse();
console.log(arr);
```

The screenshot shows the Visual Studio Code interface. The editor window displays a file named `app.js` with the following code:

```
1 // FA20-BCS-074
2 // Muaaz Shoaib
3
4 // reverse()
5 const arr = [1, 2, 3, 4, 5];
6 arr.reverse();
7 console.log(arr);
8
```

The bottom panel shows the `TERMINAL` tab with the following output:

```
PS C:\Users\muuaz\Desktop\WAD> node .\app.js
[ 5, 4, 3, 2, 1 ]
PS C:\Users\muuaz\Desktop\WAD>
```

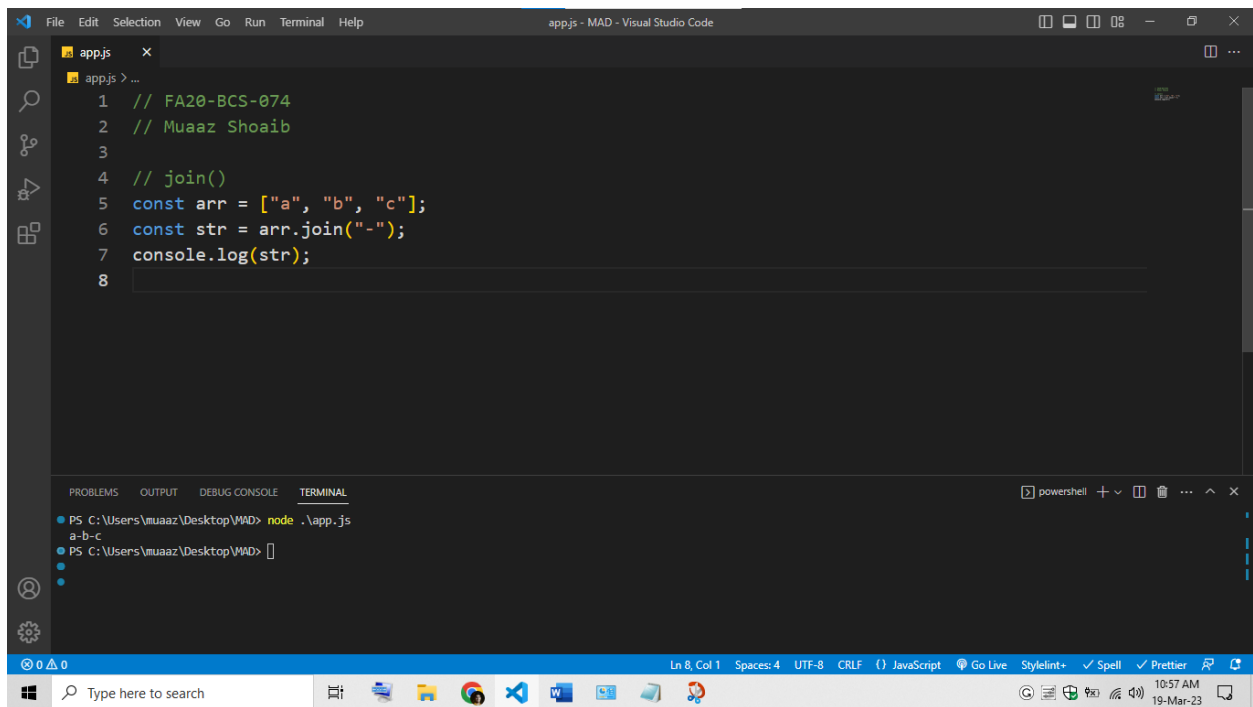
The status bar at the bottom indicates the current line and column as `Ln 8, Col 1`, and the file encoding as `UTF-8`.

join

This method joins all elements of an array into a string.

```
// FA20-BCS-074
// Muaaz Shoaib

// join()
const arr = ["a", "b", "c"];
const str = arr.join("-");
console.log(str);
```



The screenshot shows the Visual Studio Code interface. The editor window displays a file named `app.js` with the following code:

```
1 // FA20-BCS-074
2 // Muaaz Shoaib
3
4 // join()
5 const arr = ["a", "b", "c"];
6 const str = arr.join("-");
7 console.log(str);
8
```

The bottom panel shows the `TERMINAL` tab with the following output:

```
PS C:\Users\muuaz\Desktop\WAD> node .\app.js
a-b-c
PS C:\Users\muuaz\Desktop\WAD>
```

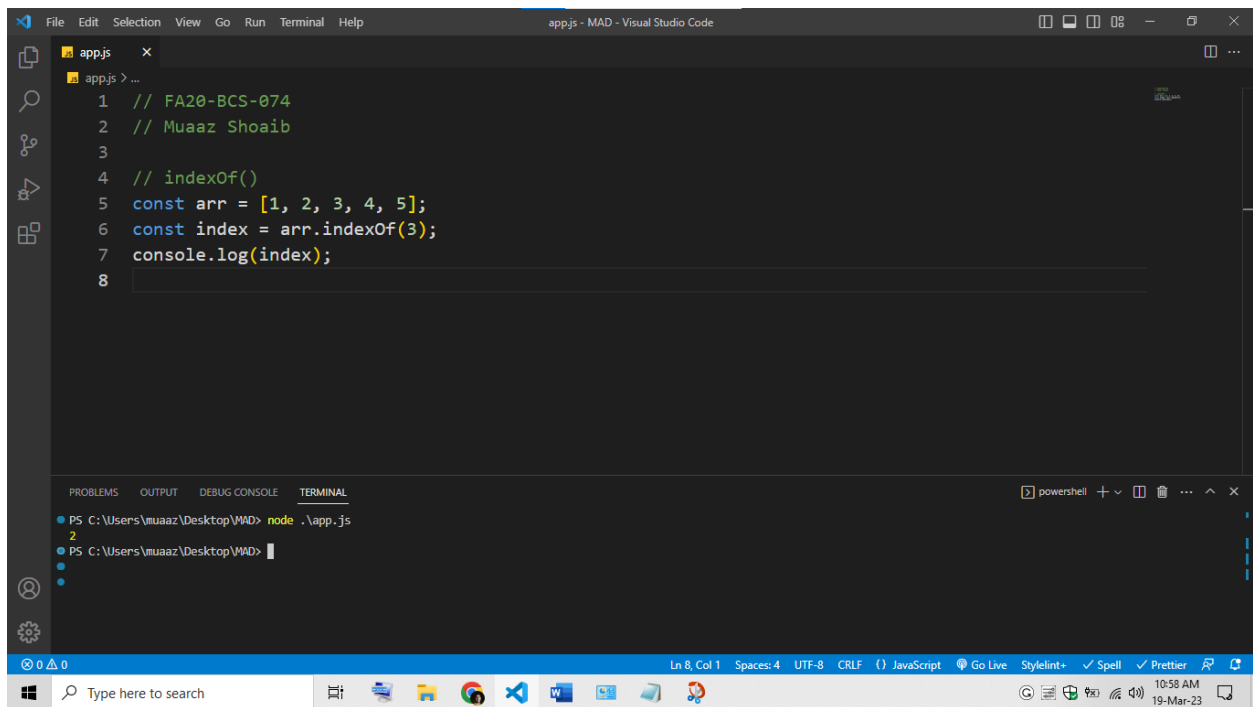
The status bar at the bottom indicates the current line and column as `Ln 8, Col 1`, and the file encoding as `UTF-8`.

indexOf

This method returns the first index at which a given element can be found in an array, or -1 if it is not present.

```
// FA20-BCS-074
// Muaaz Shoaib

// indexOf()
const arr = [1, 2, 3, 4, 5];
const index = arr.indexOf(3);
console.log(index);
```



The screenshot shows the Visual Studio Code interface. The editor window displays a file named `app.js` with the following code:

```
1 // FA20-BCS-074
2 // Muaaz Shoaib
3
4 // indexOf()
5 const arr = [1, 2, 3, 4, 5];
6 const index = arr.indexOf(3);
7 console.log(index);
8
```

The bottom panel shows the `TERMINAL` tab with the following output:

```
PS C:\Users\muaz\Desktop\WAD> node .\app.js
2
PS C:\Users\muaz\Desktop\WAD>
```

The status bar at the bottom indicates the current line and column as `Ln 8, Col 1`, and the file encoding as `UTF-8`.

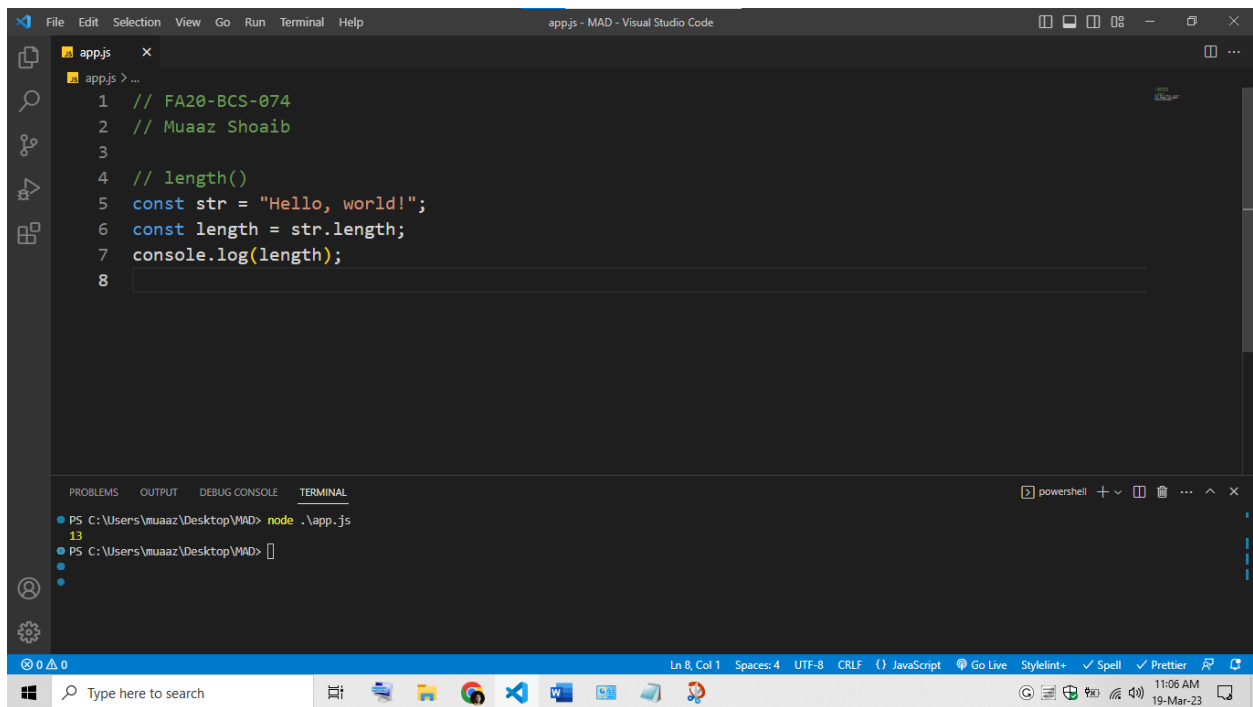
Q2: String functions in JavaScript with example.

`length`

This property returns the length of a string.

```
// FA20-BCS-074
// Muaaz Shoaib

// length()
const str = "Hello, world!";
const length = str.length;
console.log(length);
```



The screenshot shows the Visual Studio Code interface. The editor window displays a file named `app.js` with the following content:

```
1 // FA20-BCS-074
2 // Muaaz Shoaib
3
4 // length()
5 const str = "Hello, world!";
6 const length = str.length;
7 console.log(length);
8
```

Below the editor, the TERMINAL panel is active, showing a PowerShell session:

```
PS C:\Users\muuaz\Desktop\WAD> node .\app.js
13
PS C:\Users\muuaz\Desktop\WAD>
```

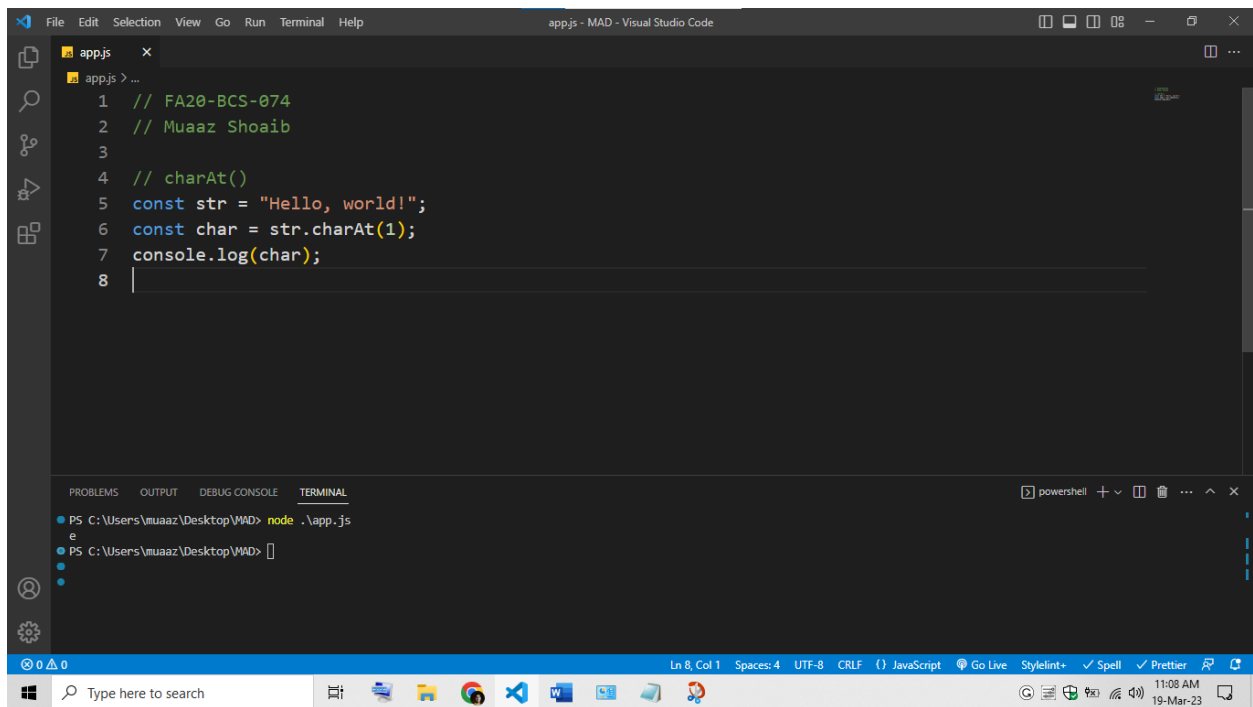
The status bar at the bottom indicates the current position is Line 8, Column 1, with 4 spaces. It also shows the file encoding as UTF-8 and the language as JavaScript. Various extensions like Go Live, Stylelint, Spell, and Prettier are listed.

charAt

This method returns the character at a specified index in a string.

```
// FA20-BCS-074
// Muaaz Shoaib

// charAt()
const str = "Hello, world!";
const char = str.charAt(1);
console.log(char);
```

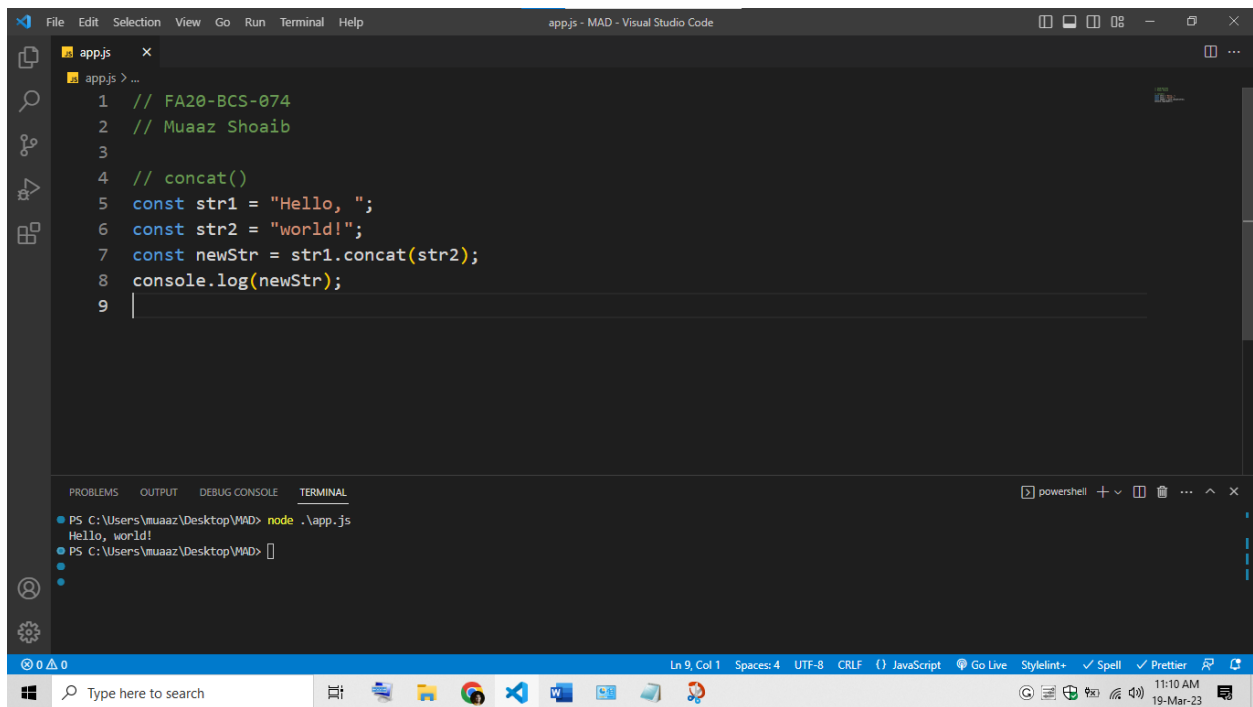


concat

This method concatenates two or more strings and returns the new string.

```
// FA20-BCS-074
// Muaaz Shoaib

// concat()
const str1 = "Hello, ";
const str2 = "world!";
const newStr = str1.concat(str2);
console.log(newStr);
```



The screenshot shows the Visual Studio Code interface. The editor window displays a file named `app.js` with the following content:

```
1 // FA20-BCS-074
2 // Muaaz Shoaib
3
4 // concat()
5 const str1 = "Hello, ";
6 const str2 = "world!";
7 const newStr = str1.concat(str2);
8 console.log(newStr);
9
```

The bottom panel shows the `TERMINAL` tab with the following output:

```
PS C:\Users\muaz\Desktop\WAD> node .\app.js
Hello, world!
PS C:\Users\muaz\Desktop\WAD>
```

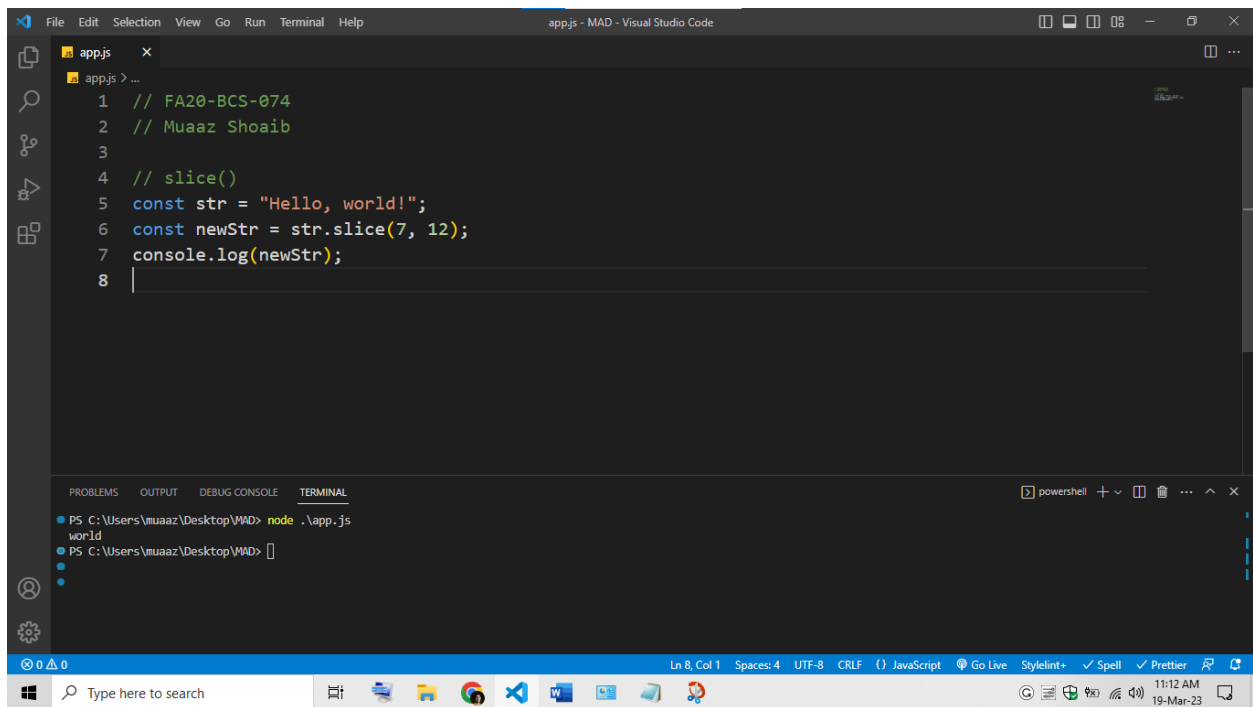
The status bar at the bottom indicates the current position is `Ln 9, Col 1`, the file encoding is `UTF-8`, and the line ending is `CRLF`. The language mode is set to `JavaScript`. The taskbar at the bottom shows various application icons and the system clock displays `11:10 AM 19-Mar-23`.

slice

This method returns a portion of a string into a new string.

```
// FA20-BCS-074
// Muaaz Shoaib

// slice()
const str = "Hello, world!";
const newStr = str.slice(7, 12);
console.log(newStr);
```



The screenshot shows the Visual Studio Code interface. The editor window displays a file named `app.js` with the following code:

```
1 // FA20-BCS-074
2 // Muaaz Shoaib
3
4 // slice()
5 const str = "Hello, world!";
6 const newStr = str.slice(7, 12);
7 console.log(newStr);
8
```

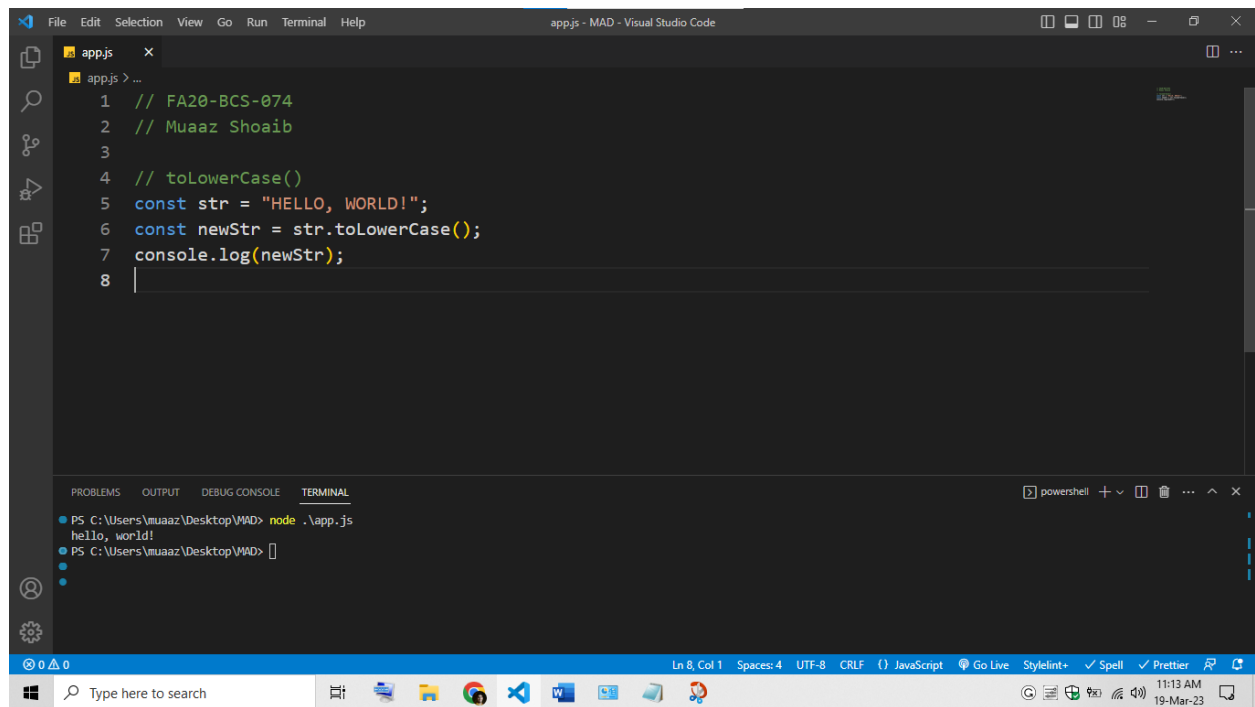
The terminal at the bottom shows the command `node .\app.js` being executed, resulting in the output `world`.

toLowerCase

This method returns a new string with all characters in lowercase.

```
// FA20-BCS-074
// Muaaz Shoaib

// toLowerCase()
const str = "HELLO, WORLD!";
const newStr = str.toLowerCase();
console.log(newStr);
```



```
File Edit Selection View Go Run Terminal Help
app.js - MAD - Visual Studio Code

app.js
1 // FA20-BCS-074
2 // Muaaz Shoaib
3
4 // toLowerCase()
5 const str = "HELLO, WORLD!";
6 const newStr = str.toLowerCase();
7 console.log(newStr);
8

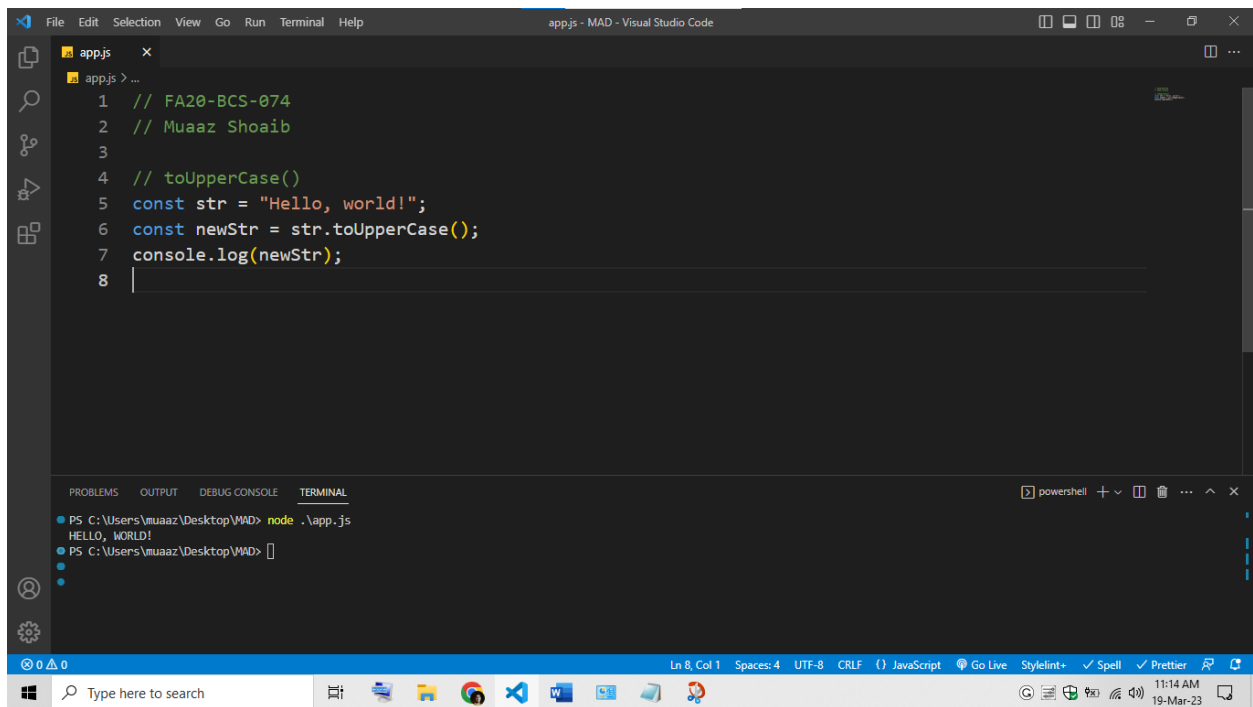
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
PS C:\Users\muuaz\Desktop\WAD> node .\app.js
hello, world!
PS C:\Users\muuaz\Desktop\WAD>
```

toUpperCase

This method returns a new string with all characters in uppercase.

```
// FA20-BCS-074
// Muaaz Shoaib

// toUpperCase()
const str = "Hello, world!";
const newStr = str.toUpperCase();
console.log(newStr);
```

The screenshot shows the Visual Studio Code interface. The editor window displays a file named `app.js` with the following code:

```
1 // FA20-BCS-074
2 // Muaaz Shoaib
3
4 // toUpperCase()
5 const str = "Hello, world!";
6 const newStr = str.toUpperCase();
7 console.log(newStr);
8
```

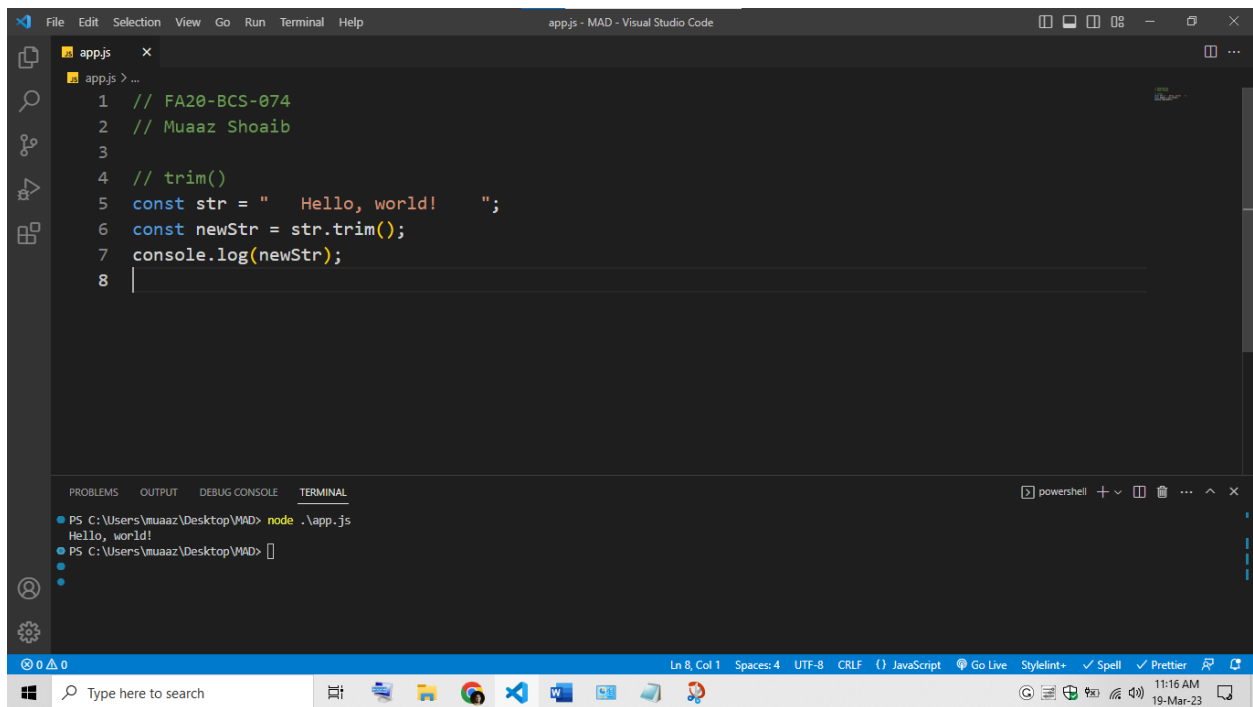
The terminal at the bottom shows the command `node .\app.js` being executed, resulting in the output `HELLO, WORLD!`.

trim

This method removes whitespace from both ends of a string.

```
// FA20-BCS-074
// Muaaz Shoaib

// trim()
const str = "  Hello, world!  ";
const newStr = str.trim();
console.log(newStr);
```



The screenshot shows the Visual Studio Code interface. The editor window displays a file named `app.js` with the following content:

```
1 // FA20-BCS-074
2 // Muaaz Shoaib
3
4 // trim()
5 const str = "  Hello, world!  ";
6 const newStr = str.trim();
7 console.log(newStr);
8
```

The bottom panel shows the `TERMINAL` tab with the following output:

```
PS C:\Users\muaz\Desktop\WAD> node .\app.js
Hello, world!
PS C:\Users\muaz\Desktop\WAD>
```

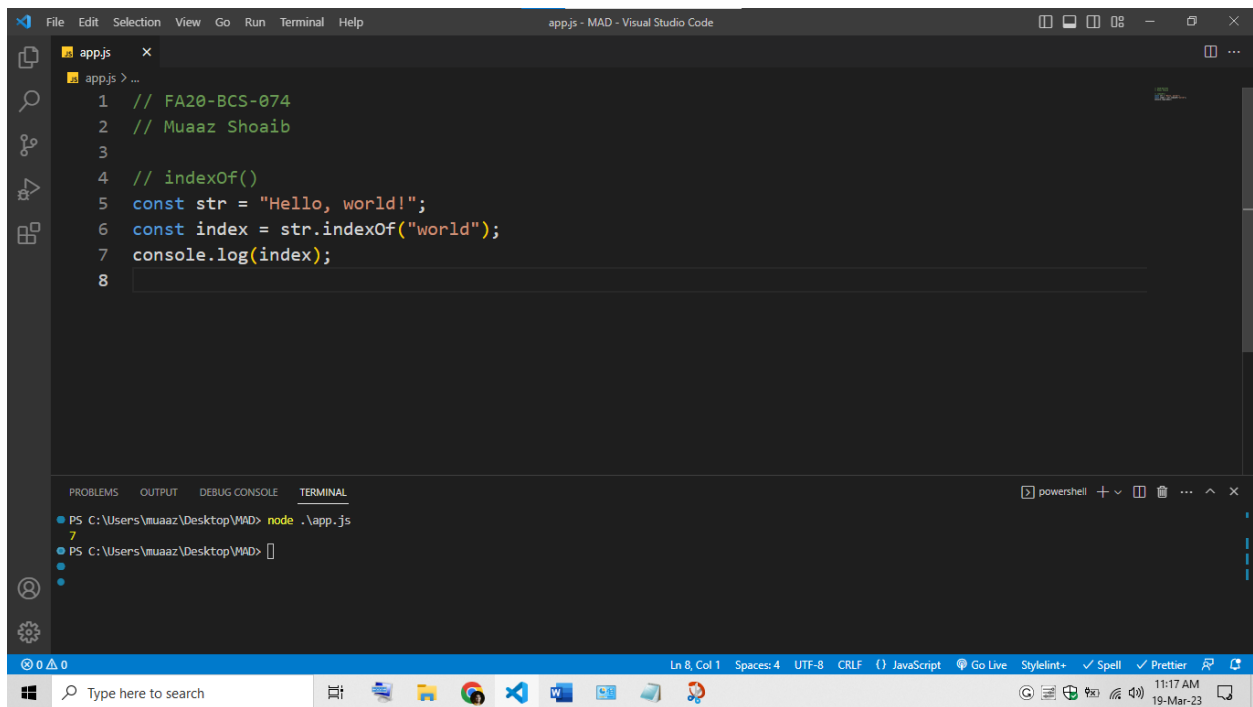
The status bar at the bottom indicates the current line and column as `Ln 8, Col 1`, and the file encoding as `UTF-8`.

indexOf

This method returns the index of the first occurrence of a specified value in a string, or -1 if it is not found.

```
// FA20-BCS-074
// Muaaz Shoaib

// indexOf()
const str = "Hello, world!";
const index = str.indexOf("world");
console.log(index);
```

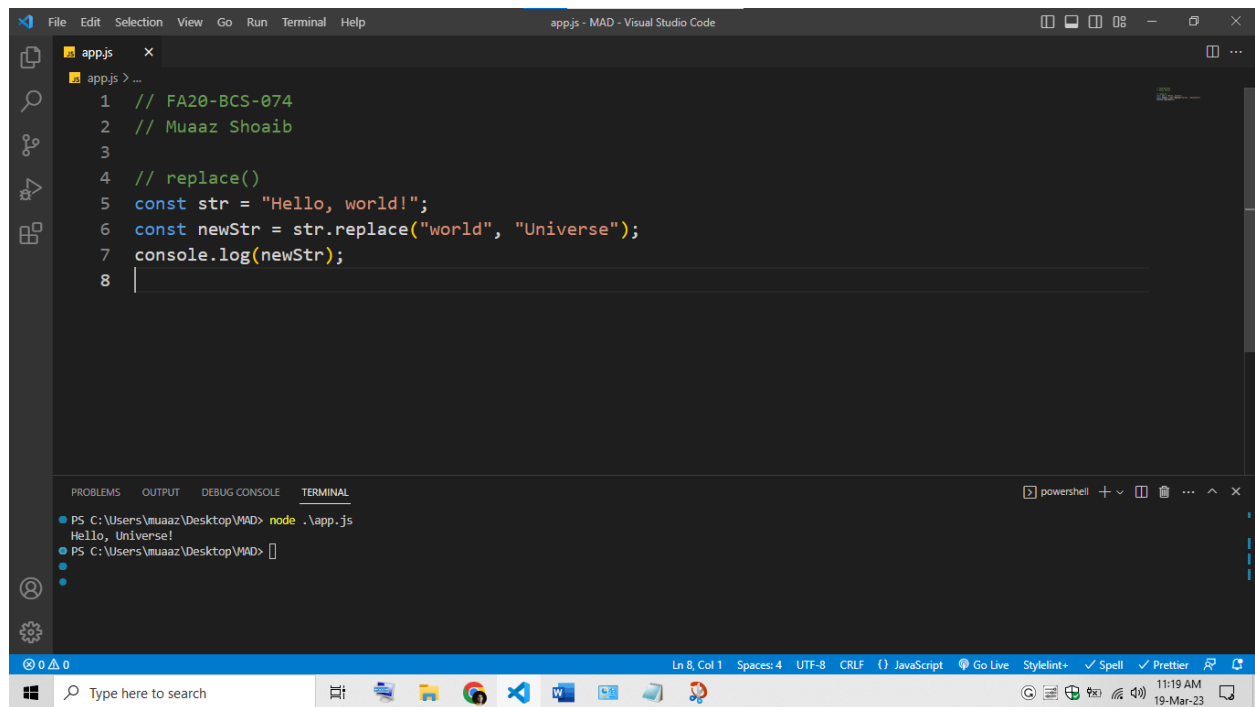


replace

This method replaces a specified value with another value in a string.

```
// FA20-BCS-074
// Muaaz Shoaib

// replace()
const str = "Hello, world!";
const newStr = str.replace("world", "Universe");
console.log(newStr);
```



The screenshot shows the Visual Studio Code interface. The editor window displays a file named `app.js` with the following code:

```
1 // FA20-BCS-074
2 // Muaaz Shoaib
3
4 // replace()
5 const str = "Hello, world!";
6 const newStr = str.replace("world", "Universe");
7 console.log(newStr);
8
```

The terminal at the bottom shows the command `node .\app.js` being executed, resulting in the output `Hello, Universe!`.

split

This method splits a string into an array of substrings based on a specified separator.

```
// FA20-BCS-074
// Muaaz Shoaib

// split()
const str = "Hello, world!";
const arr = str.split(",");
console.log(arr);
```

