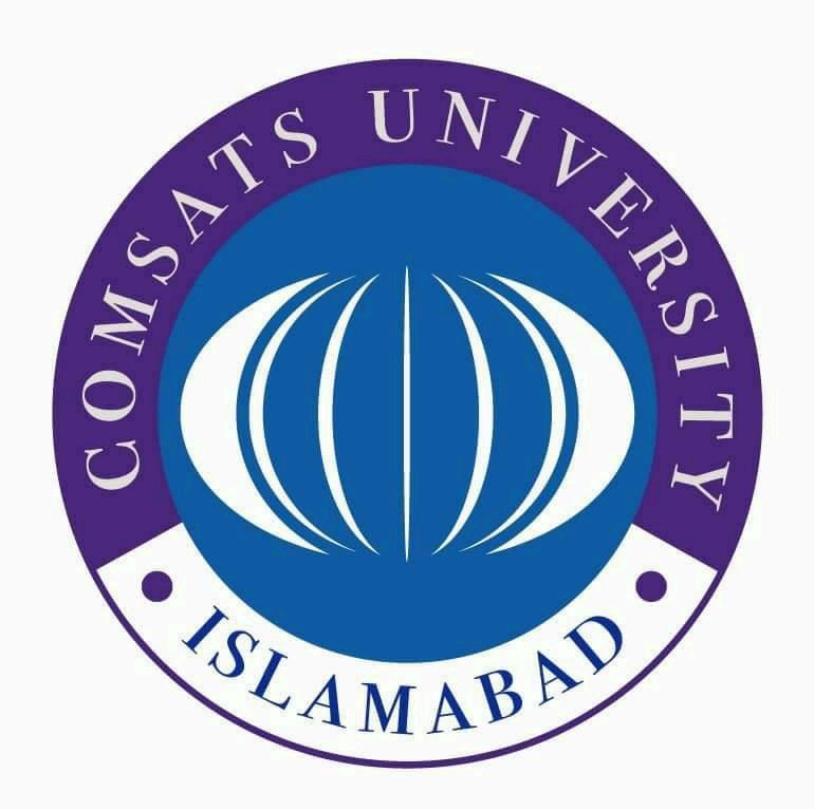


Muhammad Ali

FA20-BCS-070

Mobile Application Development (MAD)

Assignment 2

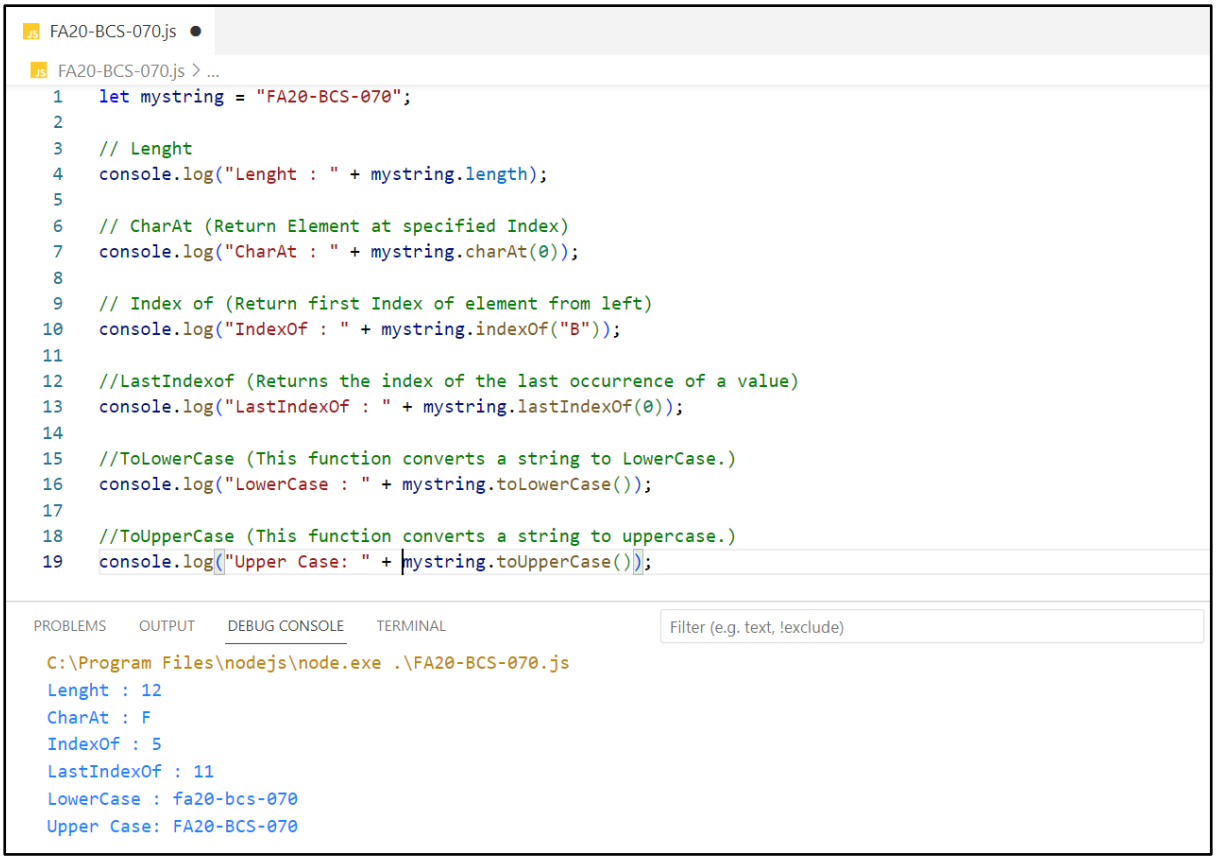
Class: **6-B**

Submitted to: **Mr. Muhammad Kamran**

Dated: **12 April, 2023**

String Built-In Functions

- **String.prototype.length:**
- **String.prototype.charAt():**
- **String.prototype.indexOf():**
- **String.prototype.lastIndexOf():**
- **String.prototype.toLowerCase():**
- **String.prototype.toUpperCase():**



- **String.prototype.replace():**
- **String.prototype.slice():**
- **String.prototype.substring():**
- **String.prototype.trim():**
- **String.prototype.split():**

FA20-BCS-070.js

```
let mystring = "FA20-BCS-070";
let mystring1 = "COMSATS Attock";

//Replace:
console.log("Replaced String : " + mystring.replace("BCS", "Computer"));

// Slice:
console.log("Slice : " + mystring.slice(0, 4));

//Substring
console.log("Substring: " + mystring.substring(5, 8));

//Trim
console.log("Trim :" + mystring1.trim());

//Split
console.log("Removing Dash(-) : " + mystring.split("-"));
console.log("Removing Space : " + mystring1.split(" "));
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL Filter (e.g. text, !exclude)

```
C:\Program Files\nodejs\node.exe .\FA20-BCS-070.js
Replaced String : FA20-Computer-070
Slice : FA20
Substring: BCS
Trim :COMSATS Attock
Removing Dash(-) : FA20,BCS,070
Removing Space : COMSATS,Attock
```

Array Built-In Functions

- **Array.isArray():**

FA20-BCS-070.js

```
let myarray = [10, 20, 30];
let mystring = "Hello";
console.log(Array.isArray(myarray));
console.log(Array.isArray(mystring));
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL Filter (e.g. text, !exclude)

```
C:\Program Files\nodejs\node.exe .\FA20-BCS-070.js
true
false
```

- **Array.prototype.concat():**
- **Array.prototype.push():**

FA20-BCS-070.js

```
5
6   let myarray1 = [10, 20, 30, 40]
7   let myarray2 = [100, 200, 300, 400]
8
9   // Used to Concat two Arrays
10  console.log("Concat Fuction " + myarray1.concat(myarray2));
11
12
13  //Used to push one or more elements in array
14  myarray1.push(80, 90)
15  console.log("Push Fuction Output:" + myarray1);
```

```
C:\Program Files\nodejs\node.exe .\FA20-BCS-070.js
Concat Fuction 10,20,30,40,100,200,300,400
Push Fuction Output:10,20,30,40,80,90
```

- **Array.prototype.shift():**
- **Array.prototype.pop():**

FA20-BCS-070.js

```
6   let myarray1 = [10, 20, 30, 40, 50]
7
8   //Used to remove first element of array
9   myarray1.shift()
10  console.log(myarray1);
11
12  // Used to remove last element from array
13  myarray1.pop();
14  console.log(myarray1);
15
```

```
C:\Program Files\nodejs\node.exe .\FA20-BCS-070.js
> (4) [20, 30, 40, 50]
> (3) [20, 30, 40]
```

- **Array.prototype.filter():**
- **Array.prototype.map():**

FA20-BCS-070.js

```
let myarray1 = [10, 21, 20, 41, 60]

//Filter() takes a function as an argument and returns a new
// array with all the elements in the original array that
// pass a certain condition defined by the function.
console.log("------------Filter FUNCTION---------------");

const get_even_numbers = myarray1.filter(X => X % 2 == + 0);
console.log("Even Numbers in Array are: " + get_even_numbers);

console.log("------------MAP FUNCTION---------------");
// Map() takes a function as an argument and applies
// that function to every element in the array,
// creating a new array with the transformed values.
const square_of_array = myarray1.map(Y => Y * Y);
console.log("Square of Elements in Array is: " + square_of_array);
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL Filter (e.g. text, !exclude)

```
C:\Program Files\nodejs\node.exe .\FA20-BCS-070.js
------------Filter FUNCTION---------------
Even Numbers in Array are: 10,20,60
------------MAP FUNCTION---------------
Square of Elements in Array is: 100,441,400,1681,3600
```

- **Array.prototype.unshift():**
- **Array.prototype.splice():**

FA20-BCS-070.js

```
let myarray1 = [10, 21, 20, 41, 60]

//Unshift fuction add element into the start
console.log("Before: " + myarray1);
myarray1.unshift(5);
console.log("Element Added: " + myarray1);

//Splice Fuction
//array.splice(start, deleteCount, item1, item2, ...)
let myarray2 = [10, 20, 30, 40, 50]
myarray2.splice(0, 2, 70, 80);
console.log("Splice Fuction: " + myarray2);
```

PROBLEMS DEBUG CONSOLE ··· Filter (e.g. text, !exclude)

```
C:\Program Files\nodejs\node.exe .\FA20-BCS-070.js
Before: 10,21,20,41,60
Element Added: 5,10,21,20,41,60
Splice Fuction: 70,80,30,40,50
```

- **Array.prototype.slice():**
- **Array.prototype.reverse():**

FA20-BCS-070.js

```
1   let myarray1 = [10, 20, 30, 40, 50]
2
3   // Extracts elements from index 1 to index 3 (not inclusive)
4   let slicedArray = myarray1.slice(1, 4);
5   console.log("Sliced Array: " + slicedArray);
6
7
8   // Reverse the elements in the array
9   let myarray2 = [40, 50, 60, 70];
10  let reversed = myarray2.reverse()
11  console.log("Reversed Array: " + reversed);
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL Filter (e.g. text, !exclude)

```
C:\Program Files\nodejs\node.exe .\FA20-BCS-070.js
Sliced Array: 20,30,40
Reversed Array: 70,60,50,40
```

- **Array.prototype.sort():**
- **Array.length:**

FA20-BCS-070.js

```
1   let myarray1 = [10, 5, 30, 15, 50]
2
3   // Sort Array
4   let sortedArray = myarray1.sort();
5   console.log("Sorted Array: " + sortedArray);
6
7   //Lenght of Array
8   console.log("Lenght of Array: " + myarray1.length);
9
```

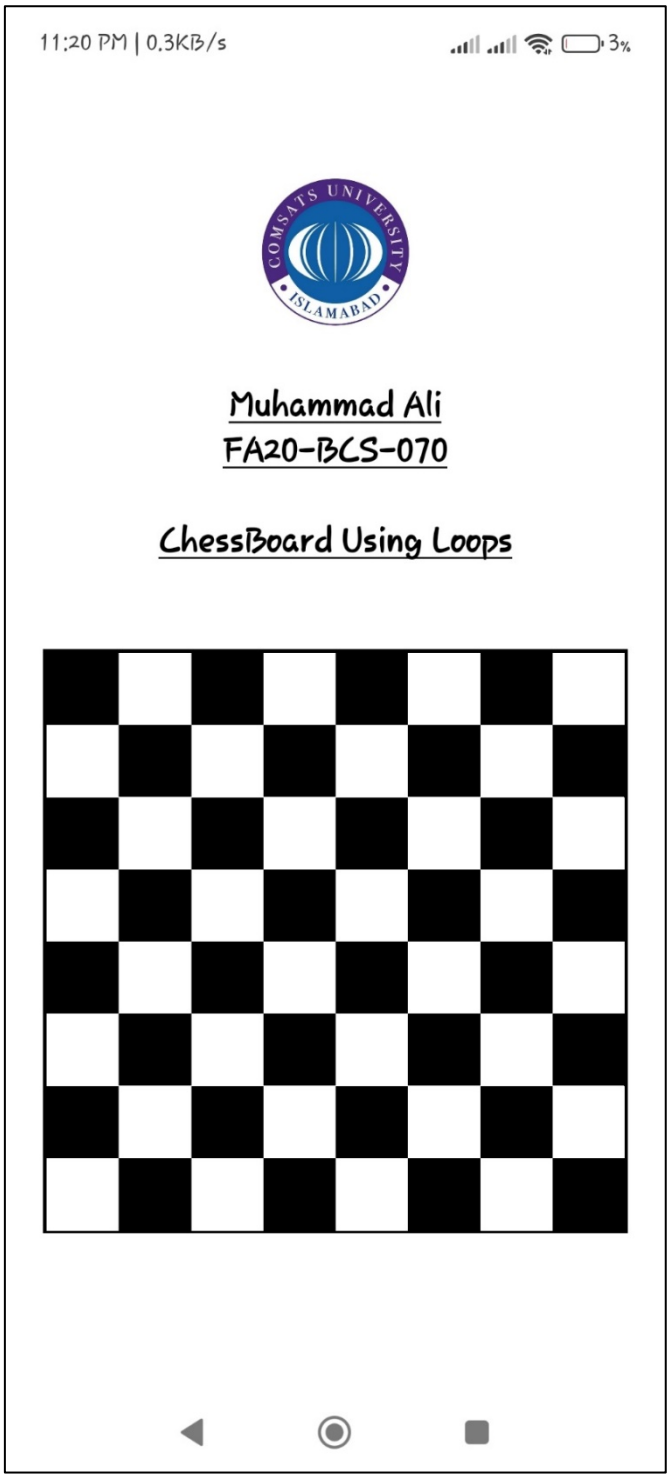
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL Filter (e.g. text, !exclude)

```
C:\Program Files\nodejs\node.exe .\FA20-BCS-070.js
Sorted Array: 10,15,30,5,50
Lenght of Array: 5
```

React Native Chess Board

Using Loops

Output



App.js

App.js ChessBoard.js

App.js > ...

```
1  import { StatusBar } from 'expo-status-bar';
2  import { StyleSheet, Text, View, Image } from 'react-native';
3  import ChessBoard from './ChessBoard';
4
5  export default function App() {
6    return (
7      <View style={styles.container}>
8
9        <Image source={require("./assets/comsats.jpg")} style={styles.logo}></Image>
10       <Text style={styles.heading}>Muhammad Ali{"\n"}FA20-BCS-070{"\n"}{"\n"}ChessBoard Using Loops</Text>
11
12       <View style={styles.board}>
13         <ChessBoard></ChessBoard>
14       </View>
15
16       <StatusBar style="auto" />
17     </View>
18   );
19 }
```

App.js (StyleSheet)

App.js ChessBoard.js

App.js > ...

```
21 const styles = StyleSheet.create({
22   container: {
23     flex: 1,
24     backgroundColor: '#fff',
25     alignItems: 'center',
26     justifyContent: 'center',
27   },
28   board: {
29     borderColor: "black",
30     borderWidth: 2,
31   },
32   heading: {
33     fontSize: 20,
34     fontWeight: "bold",
35     marginBottom: 50,
36     textAlign: "center",
37     textDecorationStyle: "solid",
38     textDecorationColor: "black",
39     textDecorationLine: "underline",
40   },
41   logo: {
42     width: 100,
43     height: 100,
44     marginBottom: 30,
45   },
46 });
47
```

ChessBoard.js

App.js | ChessBoard.js

ChessBoard.js > ...

```
import React, { Component } from 'react';
import { StyleSheet, View } from 'react-native';
export default class ChessBoard extends Component {
    render() {
        const My_Chess_board = [];
        for (let i = 0; i < 8; i++) {
            const row = [];
            for (let j = 0; j < 8; j++) {
                const color = (i + j) % 2 === 0 ? 'black' : 'white';
                row.push(
                    <View style={[styles.square, { backgroundColor: color }]} />
                );
            }
            My_Chess_board.push(
                <View style={styles.row}>{row}</View>
            );
        }
        return <View style={styles.My_Chess_board}>{My_Chess_board}</View>
    }
}


```

ChessBoard.js (Stylesheet)

App.js | ChessBoard.js

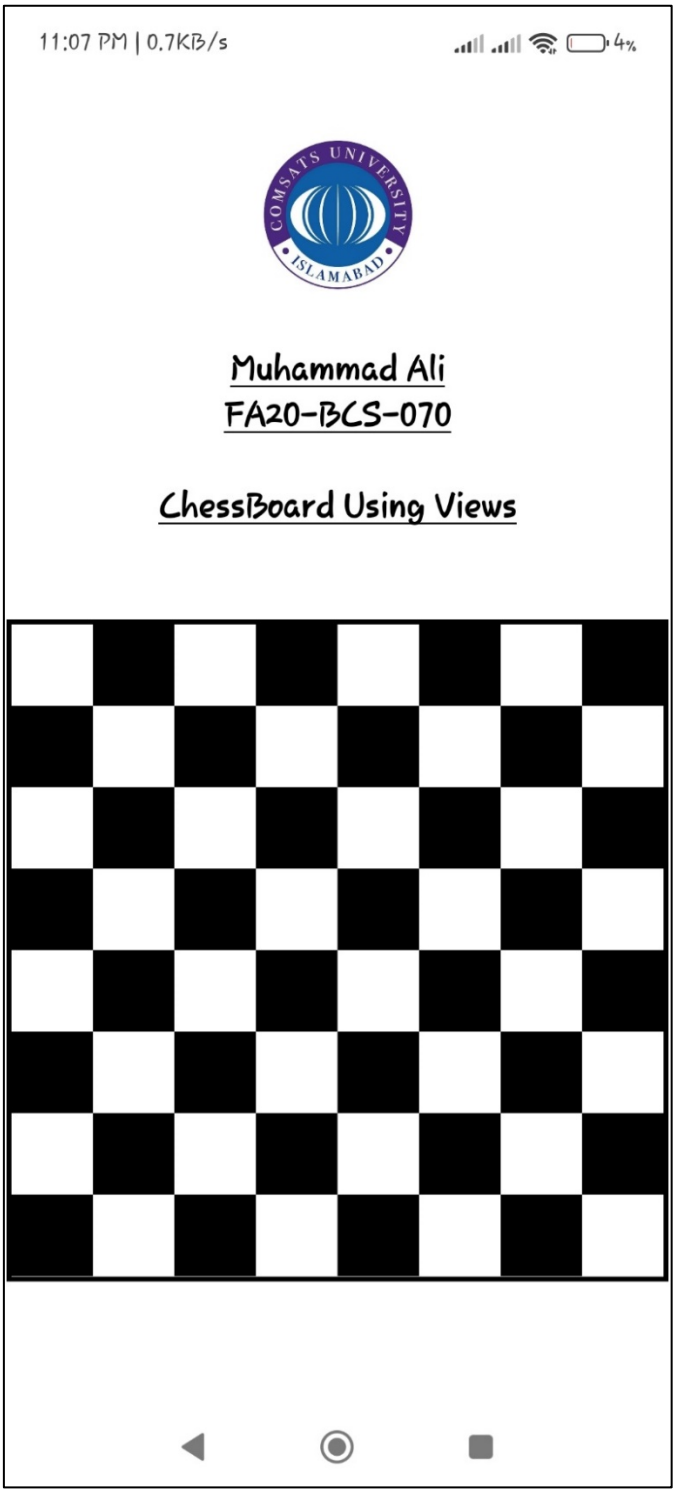
ChessBoard.js > ...

```


const styles = StyleSheet.create({
    container: {
        flex: 1,
        backgroundColor: '#fff',
        alignItems: 'center',
        justifyContent: 'center',
    },
    row: {
        flexDirection: "row",
    },
    square: {
        width: 43,
        height: 43,
    }

});
```

React Native Chess Board

Using Loops

Output



App.js

App.js

App.js > App

```
import { StatusBar } from 'expo-status-bar';
import { StyleSheet, Text, View,  Image } from 'react-native';

export default function App() {

  return (

    <View style={styles.container}>

      <Image source={require("./assets/comsats.jpg")} style={styles.logo}></Image>
      <Text style={styles.heading}>Muhammad Ali{"\n"}FA20-BCS-070{"\n"}{"\n"}ChessBoard Using Views</Text>

      <View style={styles.chess}>

        <View style={styles.row}>···
        </View>

        <View style={styles.row}>
          <View style={styles.grid2}></View>
          <View style={styles.grid1}></View>
          <View style={styles.grid2}></View>
          <View style={styles.grid1}></View>
          <View style={styles.grid2}></View>
          <View style={styles.grid1}></View>
          <View style={styles.grid2}></View>
          <View style={styles.grid1}></View>
        </View>

        <View style={styles.row}>
          <View style={styles.grid1}></View>
          <View style={styles.grid2}></View>
          <View style={styles.grid1}></View>
          <View style={styles.grid2}></View>
          <View style={styles.grid1}></View>
          <View style={styles.grid2}></View>
          <View style={styles.grid1}></View>
          <View style={styles.grid2}></View>
        </View>

        <View style={styles.row}>
          <View style={styles.grid2}></View>
          <View style={styles.grid1}></View>
          <View style={styles.grid2}></View>
          <View style={styles.grid1}></View>
          <View style={styles.grid2}></View>
          <View style={styles.grid1}></View>
          <View style={styles.grid2}></View>
```

App.js (Stylesheet)

App.js ●

App.js > App

```
const styles = StyleSheet.create({
  heading: {
    fontSize: 20,
    fontWeight: "bold",
    marginBottom: 50,
    textAlign: "center",
    textDecorationStyle: "solid",
    textDecorationColor: "black",
    textDecorationLine: "underline",
  },
  logo: {
    width: 100,
    height: 100,
    marginBottom: 30,
  },

  container: {
    backgroundColor: "white",
    flex: 1,
    justifyContent: "center",
    alignItems: "center"
  },
  grid1: {
    backgroundColor: "white",
    width: 48,
    height: 48,
  },
  grid2: {
    width: 48,
    height: 48,
    backgroundColor: "black"
  },
  chess: {
    borderColor: "black",
    borderWidth: 3,
    margin: 2,
  },
  row: {
    flexDirection: "row"
  },

});
```