



Intro to JavaScript Week 6 Coding Assignment

Points possible: 70

Category	Criteria	% of Grade
Functionality	Does the code work?	25
Organization	Is the code clean and organized? Proper use of white space, syntax, and consistency are utilized. Names and comments are concise and clear.	25
Creativity	Student solved the problems presented in the assignment using creativity and out of the box thinking.	25
Completeness	All requirements of the assignment are complete.	25

Instructions: In Visual Studio Code, or an IDE of your choice, write the code that accomplishes the objectives listed below. Ensure that the code compiles and runs as directed. Take screenshots of the code and of the running program (make sure to get screenshots of all required functionality) and paste them in this document where instructed below. Create a new repository on GitHub for this week's assignments and push this document, with your JavaScript project code, to the repository. Add the URL for this week's repository to this document where instructed and submit this document to your instructor when complete.

Coding Steps:

For the final project you will be creating an automated version of the classic card game *WAR*. You do not need to accept any user input, when you run your code, the entire game should play out instantly without any user input.

Think about how you would build this project and write your plan down. Consider classes such as Card, Deck, and Player and what fields and methods they might each have. You can implement the game however you'd like (i.e. printing to the console, using alert, or some other way). The completed project should, when ran, do the following:

- Deal 26 Cards to two Players from a Deck.
- Iterate through the turns where each Player plays a Card
- The Player who played the higher card is awarded a point
 - o Ties result in zero points for either Player
- After all cards have been played, display the score.



PROMINEO TECH

Write a Unit Test using Mocha and Chai for at least one of the functions you write.

Screenshots of Code:

```
1
2 //Build cards
3 var cardSuits = ["♥", "♦", "♣", "♠"];
4 var cardValues = ["A", 2, 3, 4, 5, 6, 7, 8, 9, 10, "J", "Q", "K"];
5 var deck = [];
6 var player1Cards, player2Cards, p1Card, p2Card, currentCard;
7 let p1Score = 26;
8 let p2Score = 26;
9
10 //Build deck of cards
11 function newDeck() {
12 //Loop through all suits (4) with all values (13)
13   cardValues.forEach(function (value) {
14     cardSuits.forEach(function (suit) {
15       var card = {
16         value: value,
17         suit: suit
18       };
19       deck.push(card);
20     });
21   });
22 }
23
```



PROMINEO TECH

```
/**
 * Randomly shuffle an array
 * https://stackoverflow.com/a/2450976/1293256
 * @param {Array} array The array to shuffle
 * @return {Array} The shuffled array
 */
function shuffle (array) {

  let currentIndex = array.length;
  let temporaryValue, randomIndex;

  // While there remain elements to shuffle...
  while (0 !== currentIndex) {
    // Pick a remaining element...
    randomIndex = Math.floor(Math.random() * currentIndex);
    currentIndex -= 1;

    // And swap it with the current element.
    temporaryValue = array[currentIndex];
    array[currentIndex] = array[randomIndex];
    array[randomIndex] = temporaryValue;
  }

  return array;
}
```



PROMINEO TECH

```
// Game setup
function startGame() {
  shuffle(deck);
  player1Cards = deck.slice(0, deck.length / 2);
  player2Cards = deck.slice((deck.length / 2 ));
  currentCard = 0;

  //testing purposes
  console.log(player1Cards);
  console.log(player2Cards);
}

function flipCard() {
  //pull current card for each player
  var p1Card = player1Cards[currentCard];
  var p2Card = player2Cards[currentCard];
  var rWinner = roundWinner(p1Card, p2Card);

  //Pull new card
  currentCard++;

  //Document round
  console.log(`
  Player 1 flips a ${p1Card.value + p1Card.suit}.
  Player 2 flips a ${p2Card.value + p2Card.suit}.
  ${rWinner}`)
}
```



PROMINEO TECH

```
// Decide who wins round by the card value index that is the highest, update cardCount for each player
function roundWinner(p1Card, p2Card, p1Score, p2Score) {
  var p1Index = cardValues.indexOf(p1Card.value);
  var p2Index = cardValues.indexOf(p2Card.value);
  if (p1Index > p2Index) {
    updateScore(p1Score, p2Score);
    p1Score = p1Score++;
    p2Score = p2Score--;
    return 'Player 1 wins this round.';
  }
  if (p2Index > p1Index) {
    updateScore(p2Score, p1Score);
    p2Score = p2Score++;
    p1Score = p1Score--;
    return 'Player 2 wins this round.';
  }
  else {
    return 'It is a tie. Flip again.'
  };
}

function updateScore() {
  console.log(`
  Player 1 Score: ${p1Score}
  Player 2 Score: ${p2Score}
  `)
}
```



PROMINEO TECH

```
function play() {  
  do {  
    flipCard();  
    updateScore();  
  } while (p1Score > 0 && p2Score > 0);  
  console.log(`  
    Game Over!  
    Final Score:  
    Player 1: ${p1Score}  
    Player 2: ${p2Score}  
  `)  
}  
  
// Play game Init  
newDeck();  
startGame();  
play();
```

Unit Test

```
1  var expect = chai.expect;  
2  
3  describe(MyFunctions, function() {  
4    describe('#updateScore', function() {  
5      it('should print the updated scores to the console.', function() {  
6        var x = updateScore();  
7        expect(x).to.equal(`  
8          Player 1 Score: ${p1Score}  
9          Player 2 Score: ${p2Score}  
10         `);  
11      });  
12    });  
13  });
```



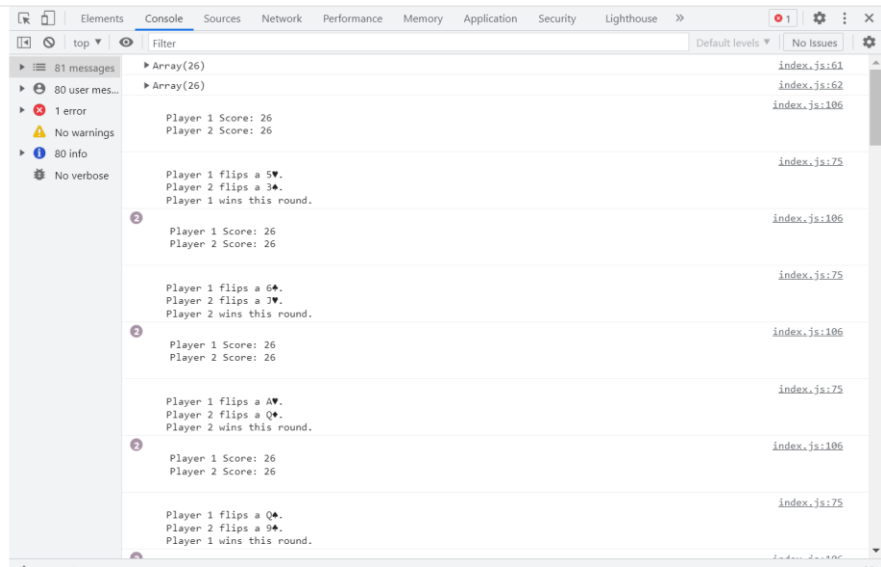
PROMINEO TECH

```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="UTF-8">
5      <meta http-equiv="X-UA-Compatible" content="IE=edge">
6      <meta name="viewport" content="width=device-width, initial-scale=1.0">
7      <title>Document</title>
8      <link rel="stylesheet" href="node_modules/mocha/mocha.css"
9  </head>
10 <body>
11 <div id="mocha">
12 <p>
13     <a href=".">Index</a>
14 </p>
15 </div>
16 <div id="messages">
17 </div>
18 <div id="scriptures"></div>
19 <script src="node_modules/mocha/mocha.js"></script>
20 <script src="node_modules/chai/chai.js"></script>
21 <script src="index.js"></script>
22 <script>mocha.setup('bdd')</script>
23 <script src="index_test.js"></script>
24 <script>mocha.run();</script>
25 </body>
26 </html>
```

Screenshots of Running Application:



War Card Game



URL to GitHub Repository:

<https://github.com/dmoylan1/week6WarGameProject.git>