Question 1 : Answer The Following Questions [12 Points]

1- What do you understand by hoisting in JavaScript?
2- Why is super used in JavaScript?
3- What is let and const? And how it differs from var?
4- Discuss the Rest parameter in ES6 What is Arrow function? What are all its uses? How it differs from normal function?
5- What is the difference between the readonly and disabled attributes for the <textarea> element
6- How do you specify units in the CSS?. What are the different ways to do it?
7- What property is used for changing the font face?
8- How to center align a div inside another div? [2 Ways]

Question2: True Or False [16 points]

1- Encapsulation is a mechanism which represent the essential features without including implementation details. False

2- Encapsulation lets you focus on what the object does instead of how it does it True

3- Abstraction means hiding the internal details or mechanics of how an object does something True

4- Overriding happens at compile-time

5- Overloading happens at runtime

6- Static binding is being used for overloaded methods and dynamic binding is being used for overridden/overriding method

7- binding object state(fields) and behavior(methods) together. If you are creating class, you are doing encapsulation.

8- Polymorphism is a object oriented programming feature that allows us to perform a single action in different ways.

Question 3 : Mcq [2 Points]

1- JavaScript is ……
   1- synchronous, blocking, single-threaded language.
   2- asynchronous, non-blocking, single-threaded language.
   3- synchronous, blocking, multi-threaded language.
   4- asynchronous, non-blocking, multi-threaded language

2- is the concept of object-oriented programming used to hide the internal representation, or state, of an object from the outside
   1) Inheritance
   2) Encapsulation
   3) Abstraction
   4) Inheritance

Question 4 : What is The Output [20 Points]

```
var p = new Promise((resolve, reject) => {
  reject(Error('The Fails!'))
})
p.catch(error => console.log(error))
p.catch(error => console.log(error.message))
p.catch(error => console.log(error.message))
```

```
function Person(firstName, lastName) {
  this.firstName = firstName;
  this.lastName = lastName;
}
const member = new Person('Lydia', 'Hallie');
Person.getFullName = function() {
  return `${this.firstName} ${this.lastName}`;
};
console.log(member.getFullName());
```

Output:
Lydia Hallie

```
const SumBy = num1 => num2 => num1 + num2;
const sumByTwo = SumBy(2);
const sumByThree = SumBy(3);

console.log(sumByTwo(4));
console.log(sumByThree(5));
```

```
class Chameleon {
  static colorChange(newColor) {
    this.newColor = newColor;
    return this.newColor;
  }

  constructor(newColor) {
    this.newColor = newColor;
  }
}

const freddie = new Chameleon('Purple');
console.log(freddie.colorChange('orange'));
```

Output:
TypeError: freddie.colorChange is not a function

```
let age = parseFloat(prompt("Enter Your Age"));
let accessAllowed = age >= 18 ? true : false ;
console.log(typeof(accessAllowed));

function greeting(){
    return "Welcome All";
}
console.log(typeof(greeting()));
```

Output:
boolean
string

```
setTimeout(function(){
    setTimeout(function(){
        console.log(2);
        setTimeout(function(){
            console.log(3);
        } , 0 );
    } , 1000);
    setTimeout(function(){
       console.log(4);
    });
    console.log(1);
} , 2000);
console.log(0);
```

Output:
0
1
4
2
3

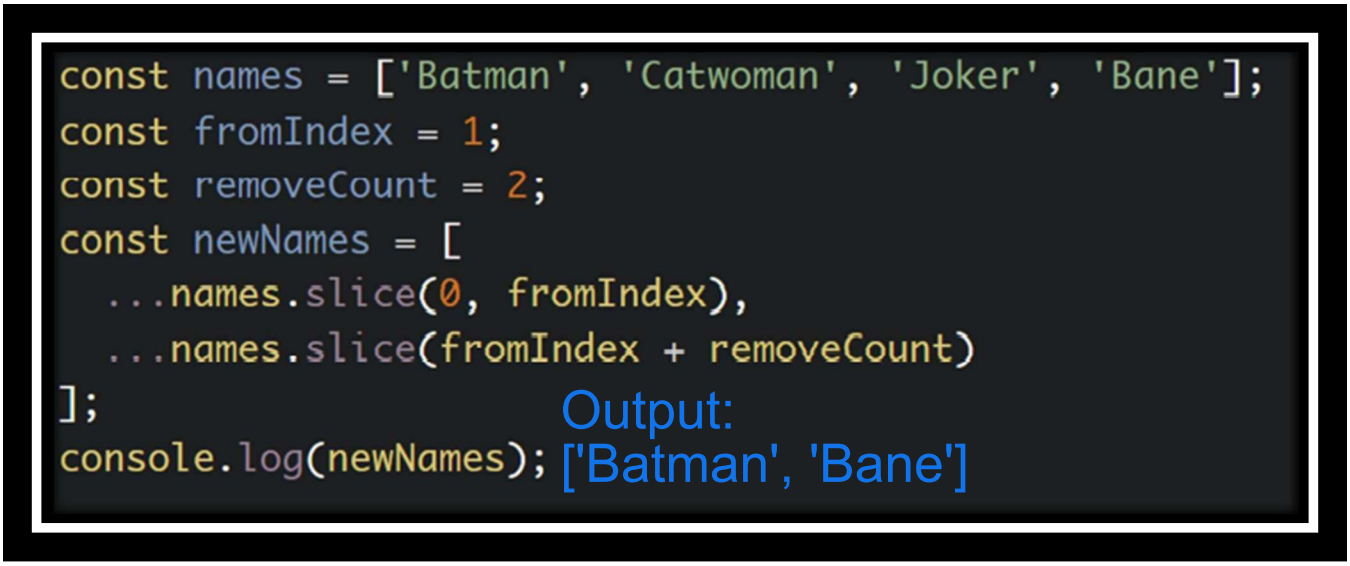
```
function counter(){
    var i = 0 ;
    return ++i;
}
console.log(i);
```

Output:
i is not defined

```
let obj = {
    msg : "hello world",
    x : 10
}

var x = "msg";

console.log(obj[x]);
console.log(obj["x"]);
```

```
const euros = [29.76, 41.85, 46.5];

const doubled = euros.reduce((total, amount) => {
  total.push(amount * 2);
  return total;
}, []);

console.log(doubled);
```

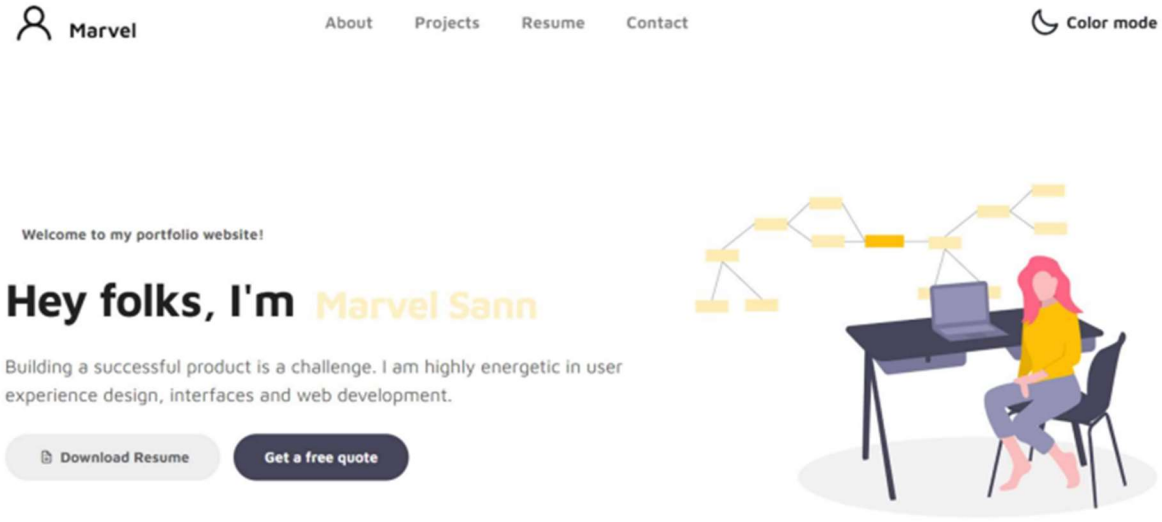
Output:
[59.52, 83.7, 93]



Question 5 : [100 Points]

1- Write a function that returns the length of a string. Make your function recursive. [15 points]
2- Write a program that prints a multiplication table for numbers up to 12. Expected Output :
   12 * 1 = 12 ==========⍰ 12 * 12 = 144 [5 points]
3- Write a function that returns the elements on odd positions in a list. [5 points]
4- Check If The Number Is Prime Or Not . [5 points]
5- Create Background Generator Using (html , css , js) . [8 points]
6- Write a short javascript function that counts the number of vowels in a given character string . [12 points]
7- Write a probram with a mother class animal. Inside it define a name and an age variables, and set_value() function.Then create two bases variables Zebra and Dolphin which write a message telling the age, the name and giving some extra information (e.g. place of origin). [5 points]

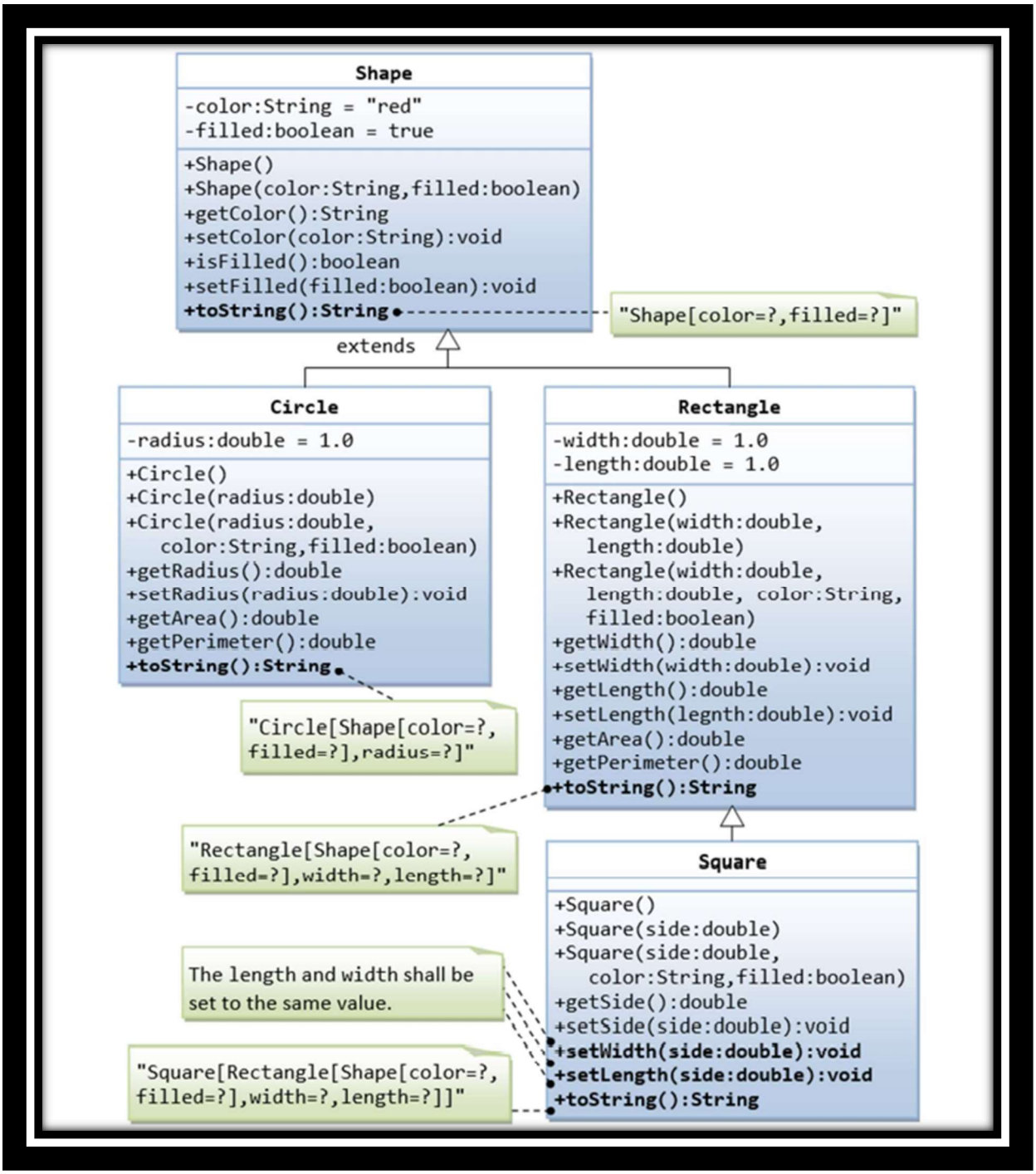
8- Using Html5 and css3 Make it possible [20 points]



9- Provide one or more alternate implementations that will work as expected. [10 points]

```
// This Code Is Bad Script Performance
function MyObject(name, message) {
  this.name = name.toString();
  this.message = message.toString();
  this.getName = function() {
    return this.name;
  }

  this.getMessage = function() {
    return this.message;
  }
}
```

10- [15 points]



++ Youtube Clone Task [50 points] [html5 and css3 only]

Good Luck 😊

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