



## Class ,Object, Methods, Variables

### 1. Creating a class

```
// Defining class  
class Vehicle {  
  
}
```

### 2. Creating the constructor

```
class Vehicle {  
    constructor(name, maker, engine) {  
        this.name = name;  
        this.maker = maker;  
        this.engine = engine;  
    }  
}
```

### 3. Adding methods

```
getDetails() {  
    return (`The name of the bike is ${this.name}.`)  
}
```

### 4. Creating Objects

```
// Making object with the help of the constructor  
const bike1 = new Vehicle('Hayabusa', 'Suzuki', '1340cc');  
const bike2 = new Vehicle('Ninja', 'Kawasaki', '998cc');
```

## 5. Accessing Methods through objects

```
console.log(bike1.name);    // Hayabusa  
console.log(bike2 maker);  // Kawasaki  
console.log(bike1.getDetails());
```

### OUTPUT

```
Hayabusa  
Kawasaki  
The name of the bike is Hayabusa.
```

### Activity 1

1. Create a class called "Rectangle".
2. Declare the constructor with width and height.
3. Create an object (rec1)
4. Display the given width via accessing the property; width through the object(rec1).

### Sample Output

```
Width of the rectangle is 10
```

## Activity 2

Modify the “Activity 1” Code according to the following instructions.

1. Create a method called “getArea”.
2. Create two objects (rec1 , rec2)
3. Pass two values for width and height for both objects and display the area of the rectangles.

Sample Output

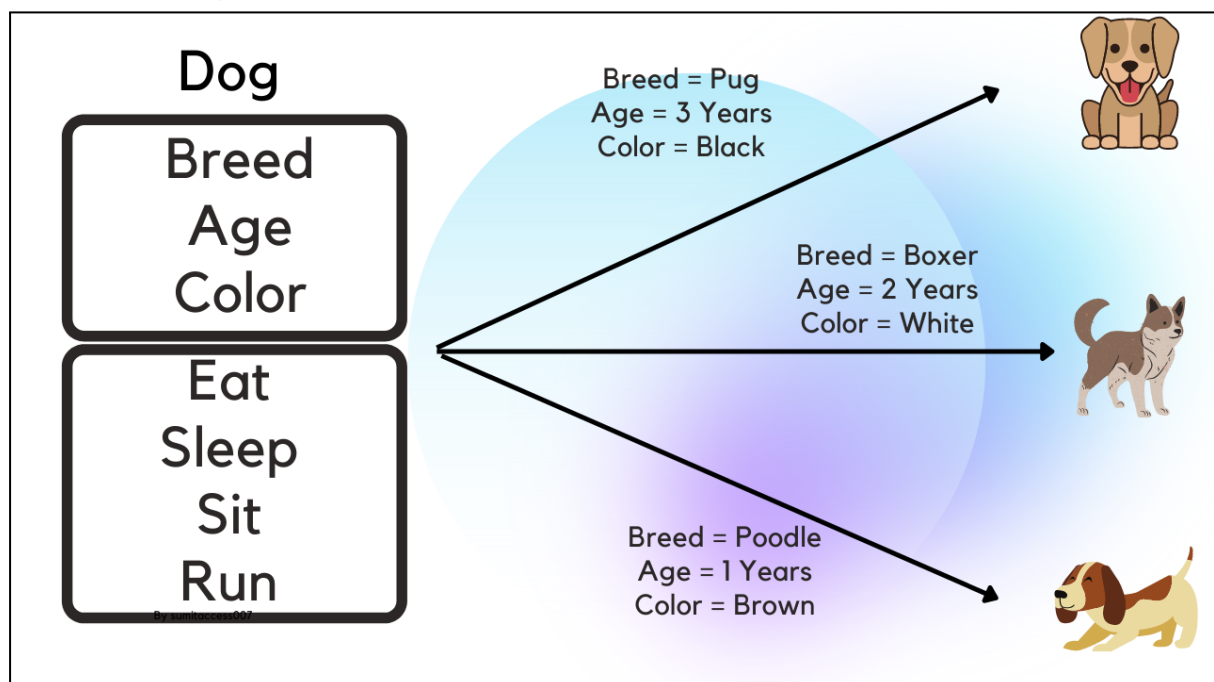
```
Area of the rectangle 1 is 200
Area of the rectangle 2 is 600
```

## Activity 3

Develop a JS OOP program to the following scenario.

*Instructions:*

1. You have to identify the variables and methods.
2. For methods display the output as a sentence. (example: “Pug is Sleeping”)
3. Expected output: (from all objects display one property and one method)



## OOP Concepts : Inheritance and Polymorphism (Overriding)

### 1. Declaring "Parent Class"

```
class Shape {  
  constructor(color) {  
    this.color = color;  
  }  
  getColor() {  
    console.log(`The color is ${this.color}`);  
  }  
}
```

### 2. Declaring subclasses

Subclass: Rectangle

```
class Rectangle extends Shape {  
  constructor(color, width, height) {  
    super(color);  
    this.width = width;  
    this.height = height;  
  }  
  getArea() {  
    const area = this.width * this.height;  
    console.log(`The area of the rectangle is ${area}`);  
  }  
}
```

Subclass : Circle

```
class Circle extends Shape {  
  constructor(color, radius) {  
    super(color);  
    this.radius = radius;  
  }  
  getArea() {  
    const area = Math.PI * this.radius ** 2;  
    console.log(`The area of the circle is ${area}`);  
  }  
}
```

### 3. Accessing objects

```
s1 =new Shape("red");  
s1.getColor();  
  
r1=new Rectangle(s1.getColor,10,20);  
r1.getArea();  
  
c1=new Circle(s1.getColor,5);  
c1.getArea();
```

#### OUTPUT

```
The color is red  
The area of the rectangle is 200  
The area of the circle is 78.53981633974483
```

*Activity 4→PTO*

#### **Activity 4**

Read the given scenario about a company and identify the superclass, subclasses, and its attributes and behaviors. According to the given details, implement suitable codes using object oriented concepts.

A company has three types of employees. They are permanent employees, contract based employees and temporary employees. All employees have an Employee Number. The details of the employees including name, address, contact number, NIC number, joined date, designation and salary must be stored.

When each employee reports to the duty it is needed to record as “Arrives at ..... (time)”. Also when duty off it should also give a notification as “Leaves at .....(time).

For temporary employees it has set the duration as 6 months and for contract employees it is 1 year. Temporary employees and contract based employees can request a duty extension after ending their due time period up to 3 months.

Company serves lunch for every employee. Employees should inform the type of lunch they prefer to get among chicken, fish, egg or vegetable.

If an employee wishes to take a leave it should inform mentioning the leave date, number of days and a reason.