```
// The destructuring assignment introduced in ES6 makes it easy to assign
array values and object properties to distinct variables.


//Before ES6
const person = {
  name: "sandra",
  age: 20,
  gender: "female",
};


//assigning object attributes to variables
let name = person.name;
let age = person.age;
let gender = person.gender;
console.log(name);
console.log(age);
console.log(gender);


//From ES6


//destructuring assignment
let { name, age, gender } = person;
console.log(name);
console.log(age);
console.log(gender);


// The order of the name does not matter in object destructuring.
let { age, gender, name } = person;
console.log(name);
console.log(age);
console.log(gender);
```

```
// If you want to assign different variable names for the object key, you
can use
let { name: LastName, age: Age, gender: Gender } = person;
console.log(LastName);
console.log(Age);
console.log(Gender);

//Array Destructuring
const arrvalue = ["one", "two", "three"];
const [x, y, z] = arrvalue;
console.log(x);
console.log(y);
console.log(z);

//nested objects

const nest = {
  start: {
    x: 5,
    y: 7,
  },
  end: {
    x: 8,
    y: 9,
  },
};

const {
  start: { x: startX, y: startY },
} = nest;

console.log(startX, startY);
```

```
const {
  end: { x: endX, y: endY },
} = nest;

console.log(endX, endY);

const arr = [1, 2, 3, 4, 5, 6, 7, 8, 9];

const [first, second, , , fifth] = arr;

console.log(first, second, fifth);

//Rest operator

const [first, second, ...theRest] = arr;
console.log(first, second);
console.log(theRest);

function doesEverythingPossibleTo2Numbers(a, b) {
  return [a + b, a - b, a * b, a / b, a % b, Math.pow(a, b), a == b];
}

let [add, sub, mul, div, mod, pow, eq] =
                              doesEverythingPossibleTo2Numbers(4, 2);

console.log(add, sub, mul, div, mod, pow, eq);

let [add, sub, ...Rest] = doesEverythingPossibleTo2Numbers(6, 3);

console.log(add, sub);
console.log(Rest);
```

```
const animal = {
  species: "dog",
  age: 4,
  sound: "woof",
};
const { species, sound } = animal;

console.log(`The ${species} makes ${sound}!`);

makeSound({
  species: "dog",
  age: 5,
  sound: "woof",
});

function makeSound(options) {
  console.log(`The ${options.species} makes ${options.sound}!`);
}
```